Grapholas® 5.5

USER MANUAL

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CHAPTER 1 - Introduction

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The Grapholas® software is used to imposition images on a plate and ablate them with a Cyrel Digital Imager (CDI).
Grapholas® consists of two main components: the set-up or merging software (Merger) and the engraving software (Expose). The program 'Screen View' is used to view the .len-files, zooming in down to the individual pixel level.
Note: Grapholas® requires Windows 2000. Grapholas® PlatePrep can alternatively be installed on Windows XP platforms!

1-1 The structure of the Grapholas® software

The Grapholas® Software consists of the following modules:

1. MERGE

   The MERGE program is used to imposition one or several jobs on the flexo plate. In doing so, it communicates with the EXPOSE program.

2. EXPOSE

   The EXPOSE program sends the job or a collection of jobs created by the MERGE program to the CDI system.

3. VIEW

   The VIEW program serves as a proofing tool, displaying parts of a job or even entire jobs. To support this, powerful zooming functions, which allow zooming down to pixel resolution, have been implemented.

All of these programs may be started via an icon the Windows desktop.

1-2 Switching on the CDI

Step 1: In a first step, switch on the CDIwith the 'Main' switch located on the left side of the machine.
Step 2: Press the 'System on' key located next to the 'Main' switch.
Step 3: Wait until you are prompted to enter a login name. Wait for at least 2 minutes before continuing with step 5. This offers Windows enough time to initialize all processes.
Step 4: Log on as 'flexo', using no password.
Step 5: Wait until Windows has started and the hardware is booted automatically.
Step 6: Click on the icon 'Server start' on your desktop and wait until the services are launched.
Step 7: Click on the icon 'Expose' on your desktop. This starts the Grapholas® machine control software .
Step 8: Click on the icon 'Merge' on your desktop. This starts the Grapholas® Merge software.

If no error messages appear, everything is okay and the system is ready for use.

You may now begin setting up a job.

CHAPTER 2 - The Merge program

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2-1 Purpose of the Merge program

This program provides a user-friendly and easy to use graphical user interface for working with the CDI.
The Merge program operates independently from the Expose software, which it contacts solely via a network connection.

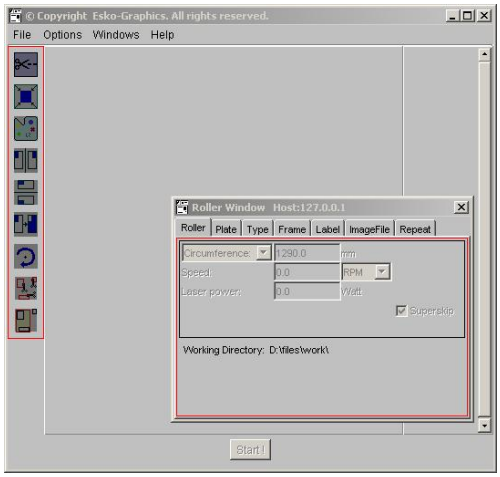
It is therefore possible to run several instances of the Merge program and set up plates (PlatePrep) on various work stations within the corporate network.

This enables an extremely flexible manner of operation, integrating perfectly into individual work routines.

Note: Grapholas® runs only on Windows platforms.

Starting screen

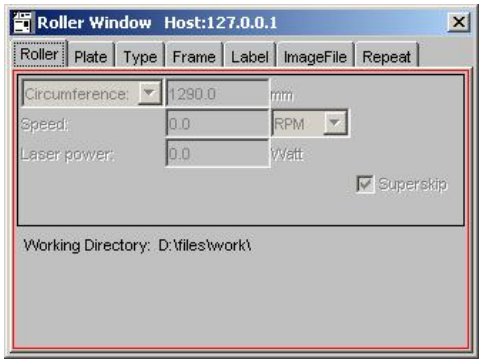
The first screen that appears after the Merge program is launched looks like this:



Starting screen

On the top end is the title bar displaying '© Copyright Esko- Graphics'. Below, you see the menu bar with the menus 'File', 'Options', 'Windows' and 'Help'.

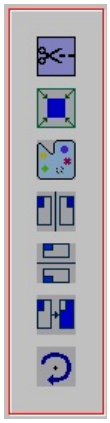
In the lower part is a further, smaller window, the "Roller window". This window contains several tabs: (if this window does not appear, see chapter 2-2-3)



The right-hand side of the program window shows the toolbar. It is still empty, as so far no images have been loaded:

In an analogy to conventional plate production, the toolbar can be considered the storage space for the 'films' that are to be exposed.

On the left-hand side there are several other tools:



Here you will find several buttons with icons.

The top button represents the "Crop image" tool.

Activates the function "Automatic image cropping". "Automatic image cropping" removes all empty areas around an image.

The third button is used to run the "Screen View" program which displays the ripped image data.

The fourth button is used to flip the image horizontally.

The fifth button flips the image vertically.

The next icon is used to change the color codes from positive to negative (and vice versa).

The last button rotates the image.

As a general rule, any image manipulation creates a copy of the original image with the following names:

"Automatic image cropping" creates the file "Filename_acrop.len".

Mirroring along the x-axis creates the file "Filename_xmir.len".

Mirroring along the y-axis creates the file "Filename_ymir.len".

An inversion creates the file "Filename_inv.len".

Rotating creates the file "Filename_rot.len".

For this version of the program the rotation tool has been improved considerably. The rotated image now appears immediately after the function has been run.

2-1-1 Steps performed during job set-up

1. Select working directory

2. Load image(s) (.len or .tif)
3. Select plate size
4. Position image(s), manually or automatically
5. Select type of plate

6. Start job

These steps are explained in detail in the next chapter.

2-2 Menu bar

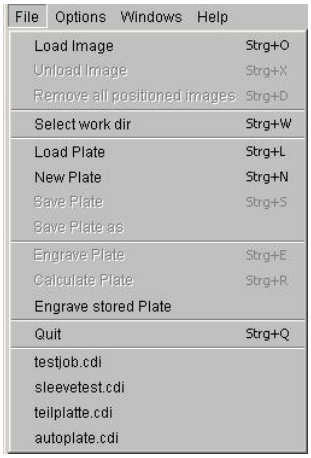
The menu bar is located below the title bar. It contains the following entries:
File
Options
Windows
Help

The menu entries within these menus are explained in detail in the following chapters.

2-2-1 Menu bar: "File" menu

If you hover the mouse pointer over the menu bar entry "File" and click on it with the left mouse button the menu is expanded, offering the following choices:

"File" menu



The following options are available:

- Load Image
- Unload Image
- Remove all positioned images
- Select the working directory
- Load Plate
- New Plate
- Save Plate

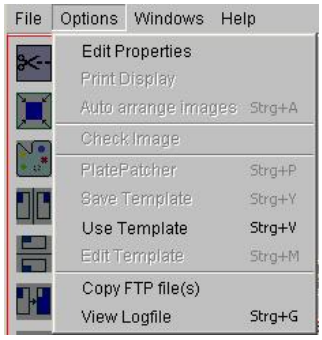
- Save Plate as
- Engrave Plate
- Calculate Plate
- Engrave stored Plate
- Quit
- y.cdi
- D:\files\work\voll40.cdi
- templ1.cdi

If you select "Quit", you are prompted to save your work and the Merge program closes.

At the end of the menu the most recently opened files are shown (in this case y.cdi, D:\files\work\voll40.cdi and templ1.cdi, etc.). If you want to open one of these recently opened files, simply click on the corresponding file name. (See also: Load Plate.)

2-2-2 Menu bar: "Options" menu

If you place the mouse pointer over the "Options" menu in the Merge program's menu bar and then click on it with the left mouse button, the "Options" menu is opened:



It contains the following options:
- Edit Properties
- Print Display
- Auto arrange images
- Check Image
- Save Template
- Use Template
- Edit Template
- Copy FTP File(s)
- View Logfile

"Edit Properties" opens a new window, in which some of the settings for the Merge program can be changed. See chapter 2-20.

"Print Display" is deactivated permanently, as it is not yet fully functional.

"Auto arrange images" sets as many images onto a plate as possible , thus ensuring an

optimal usage of the plate.

"Check Image" allows you to check if the selected image is valid and flawless.

The 3 template functions are explained in chapter 2-15.

"Copy FTP File(s)" opens the file selection window, allowing you to copy or move files from an FTP-Host to your local hard drive. (See chapter 2-3-2.) This works just like the option "Open File", except that the files are not loaded into the Merge program. If you set the file name filter to "*.*", you have access to all files, not just the image files. Both FTP-Upload and FTP-Download is supported.

"View Logfile" opens a window in which you may access information on all the images that have been engraved so far. This function will also be explained later on.

2-2-3 Menu bar: "Windows" menu

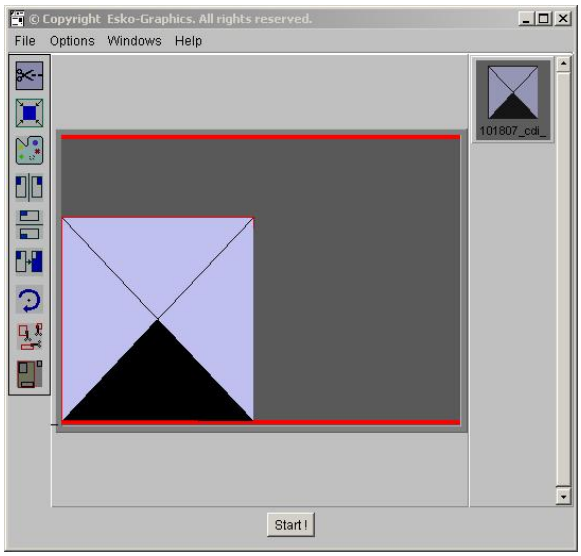
This menu has 3 entries:
- Show Images as …

- Display names

- Roller Window

Use the left mouse button to click on the menu option "Show Images as ...". A sub-menu appears.

If you select "Images", the true content of the loaded images is shown in the Merge program's display area. If you select "Tiles" (placeholder), the images are shown as blue and black rectangles. This is illustrated in the following example:



The black triangle in the tiles shows the bottom part of the image.

You can use "Tiles" to save time, as there no conversion to miniature images is necessary.

Note: Usually "Images" is selected for this option. Starting with version 4.0, the conversion of .len images to miniature images is approximately 60 times faster than in earlier versions.

If the second entry "Display Names" is selected, the name of an image is shown together with its representation in the Merger. The name is, of course, shown on the screen only, it will not appear on the engraved plate.

The third entry in the "Windows" menu is "Roller Window". This feature enables or deactivates the roller window. This may enhance clarity.

2-2-4 Menu entry "Help"

This menu contains the entry: "Info". When it is selected, a window with information on the currently used software appears:

In this window, please note the information on the implemented program version, e.g. in this case Version 5.0 >Sleeve<.

Note: Should you have any questions concerning the program, please always provide this version number!

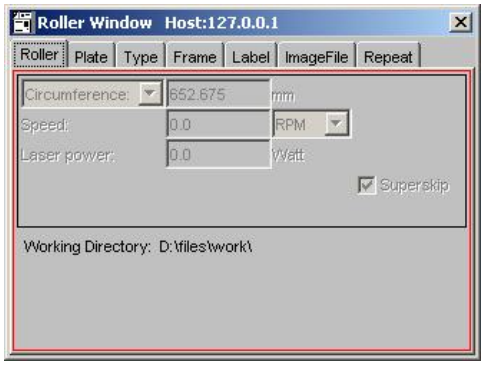
2-3 Options within the "File" menu

The following is a detailed description of the options provided within the "File" menu:

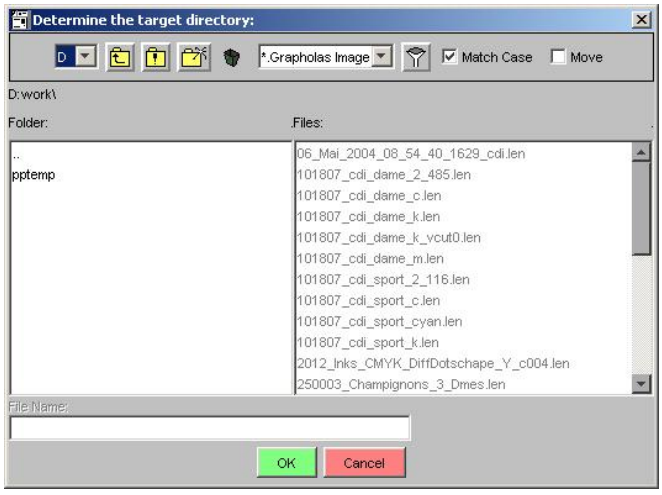
2-3-1 Select working directory

For program version 5.0 and higher, the first step in creating a new plate is to select the current working directory.

The currently set working directory is shown in the roller window:



In order to change it, select the menu option "File" -> "Select working directory". The following window then opens:



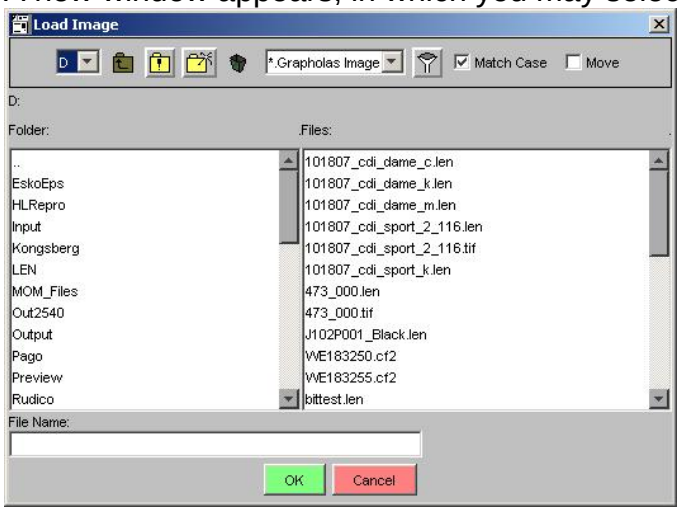
It is not necessary to select a file, simply navigate to the directory into which the current plate is to be placed, or create a new directory and navigate to it.

Grapholas 5.0 uses working directories. This means that all files that are loaded from the network or from the local hard drive are copied or moved into this working directory.

Note: When setting up a new plate, please always make sure that the working directory is set properly!

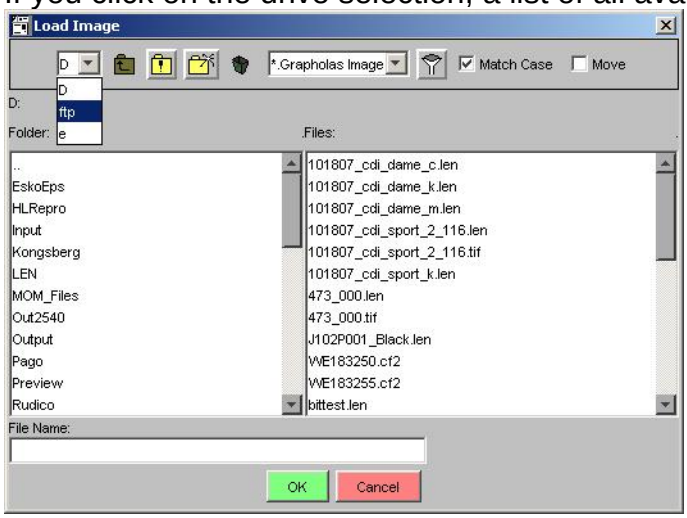
2-3-2 Load Image

Click on the entry "Load Image" with the left mouse button to load an image.
A new window appears, in which you may select the image you would like to load:



Starting screen for file selection

This practical tool allows you to load images saved locally or within the network.
If you click on the drive selection, a list of all available drives is displayed:



Drive selection in file selection window

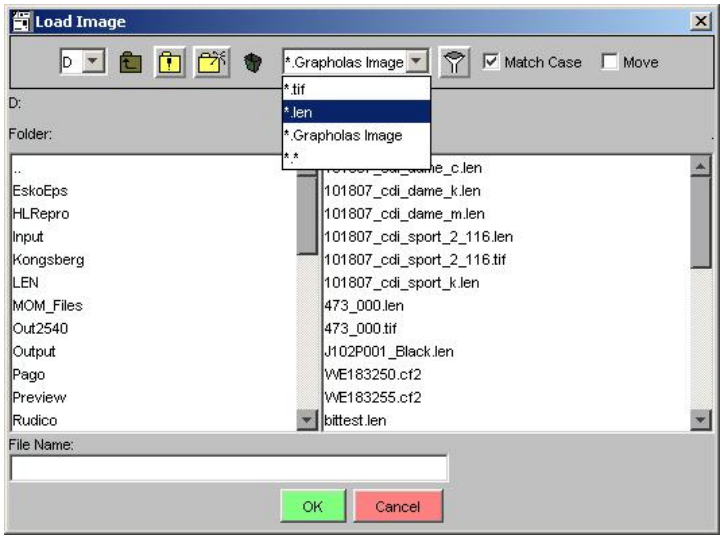
In this example "e:" is a local drive, while "ftp" is a network drive.
By now, all network drives have been hooked up via the FTP protocol, so that images can be loaded directly from the Esko FastRip, FlexRip or any other host that supports the FTP protocol.

The list of available drives is edited using the guinet tool.
This setting is determined during installation or when the system administrator wishes to add a further drive. For further information, please refer to the chapter "Advanced

Settings".

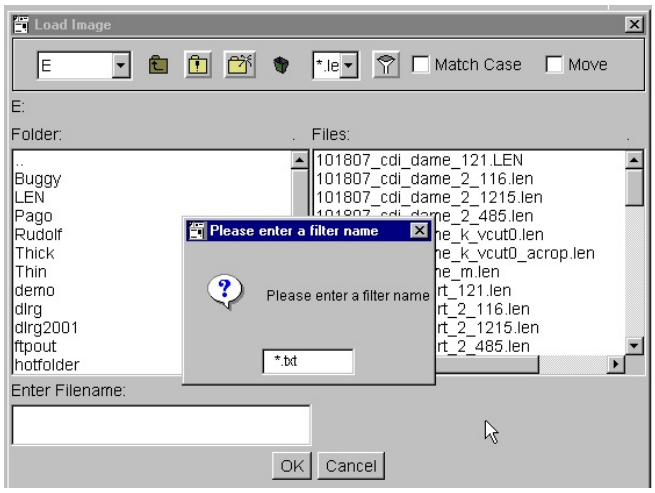
After you have selected a drive, the folders and files located in this drive appear in the corresponding folder and file lists.
If you use a filter other than "*.*", only the files matching this filter are shown in the file list. In this case the file name filter *.Grapholas Image is used, so that only files with extensions that can be processed by the Merger are shown. In this case ".len" and ".tif" files.
Note: The definition of "Grapholas Image" is new to version 5.0. In earlier versions ".len" or ".tif" could only be shown one at a time.

The filter settings are changed by selecting a new filter in the filter selection.



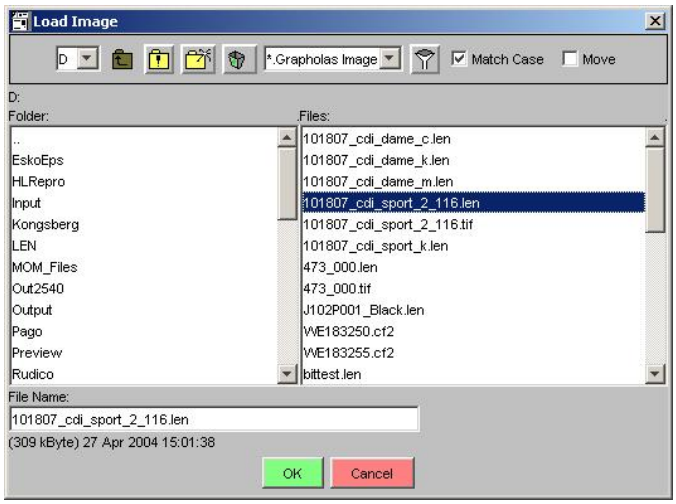
If the desired filter is not available, click on the filter icon.
This opens a window, in which you may specify the new filter name.

If, for example, a new filter is specified for ".txt", the file selection window will only display files with the extension ".txt".



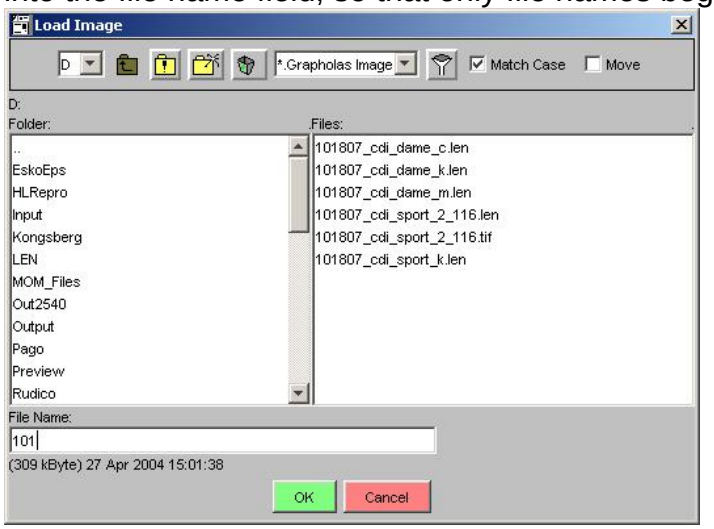
If you want the file selection to be case sensitive, check the box "Match Case".
In this case files with the extension .LEN are no longer shown, as the filter was specified with lower case names (e.g. file from MAC).

In this version of the Merger images may be loaded in the formats .len or .tif.
When the image that is to be loaded is displayed in the file list, simply click on it to make a selection.

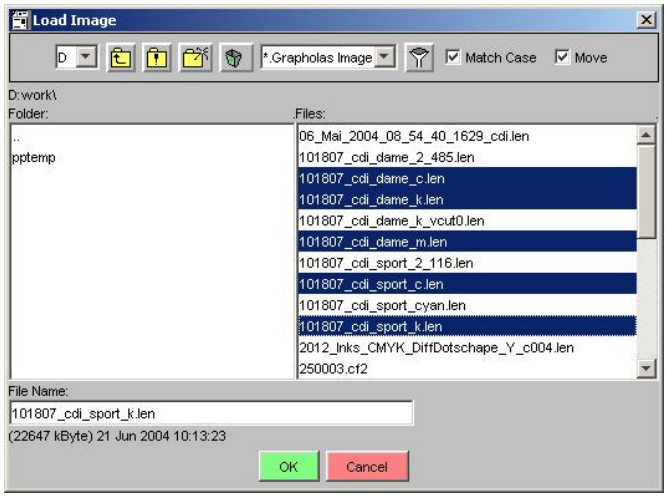


The name of the file selected first is shown in the field "Specify file name"; below, the size and the creation date of this file appear. The list of file names is reduced to names that match the base name of the entry in the file name field.
This is useful if you have very long file lists, and know that all files belonging to the job you are setting up begin with "101", for example. In this case, simply enter this string

into the file name field, so that only file names beginning with this string are shown:

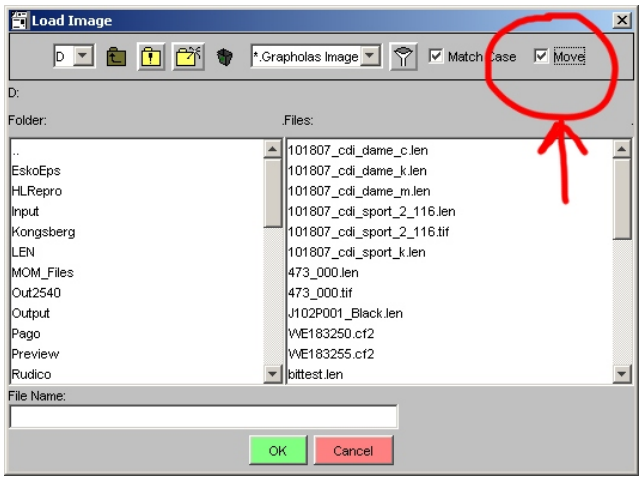


In order to select several images, press the Ctrl key and keep it pressed while making your selections. See next illustration:



Note: Please note, that only the name and the size of the last selected file is shown in the file name field.

You can furthermore select whether the files are to be moved (default setting) or copied.



When you are finished, click on "OK" to close the file selection window and return to the Merger.

The selected files are now loaded into the previously defined working directory. They are either copied or moved, depending on the settings!

After this, the files are loaded into the Merger and shown as tiles in the Merge program's toolbar during loading.

There are several further options available in the File Handler which have not yet been explained. The top bar contains the following icons.

The icon on the far left moves to the parent directory, if you are not yet in the drive's root directory. In the root directory, this icon is deactivated.

This icon reloads the list of icons in the specified directory. (Refresh)

Next to it you see the icon used to create a new directory. This icon is only available for local drives.

The next icon represents the trash can. If you select files and then click on this icon, these files are deleted.

Caution: The delete function works just like "del Filename.*"!

2-3-3 Unload Image

This "File" menu function allows you to remove the currently selected image from the plate representation in the Merger as well as from the toolbar.

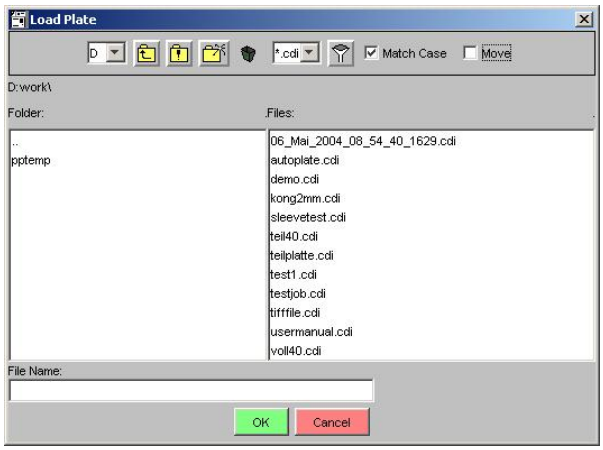
In the following, the "Plate representation in the Merger" is simply referred to as "plate".

2-3-4 Remove all positioned images

This "File" menu function removes all images positioned on the plate. You can use this feature, for example, if you have selected more images than you can fit on the plate. You first fill the plate using the function "Auto arrange images", then send this job to the "Exposer" and finally set up the remaining images. Before doing this, however, you must remove the old images. That is where this feature comes in handy.

2-3-5 Load Plate

If you select this menu option, a file selection window opens, allowing you to load previously saved jobs.



Select a job in the list of old jobs that is displayed in the "Files" field. Please note, that the file name filter is set to ".cdi", so that only job files are displayed. Clicking on "OK" loads the selected job, allowing you to edit it.

Note: Previously saved jobs can only be loaded, if the corresponding images have not been deleted.

2-3-6 New Plate

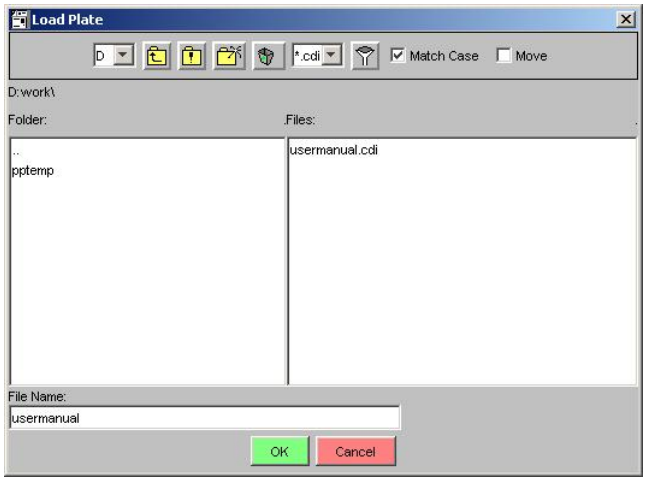
This option allows you to create a new job. If there is still a job loaded in the Merger, you are prompted to save it first. After you have done this, the job is removed from the Merger and you may begin creating a new job.

2-3-7 Saving a job

If you now click on the "Start" button on the bottom of the Merge window, you are prompted to first save this job.

Of course, you could also click on "Save" or "Save as" in the "File" menu first.
By selecting "Save as" you can save the job under a new name. This is useful, for example, if you have edited an older job and wand to save the result without overwriting the old job.

The name for this job is entered in the file selection window (it is not necessary to specify an extension).



In our example the name "usermanual" was entered in the file selection field. The filter is set to ".cdi", so that only earlier jobs are displayed. All jobs created by the Merge program receive the extension ".cdi".

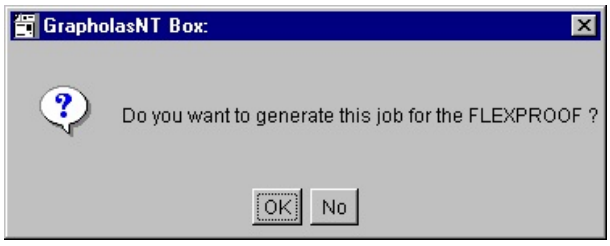
Note: At this point it is not possible to change the directory, as otherwise the job would not be saved in the working directory!

If an older job is to be started that has already been converted (the resulting image and the parameter file have already been created), the function "Engrave stored Plate" is used.

2-3-8 Calculating a job

The option "Calculate Plate" allows you to create the resulting image and the parameter file without sending them to the server. In this way you may calculate as many plates as you like, e.g. for testing purposes.

When you select "Calculate Plate", a dialog box appears:



If you click on "OK", the Merge program creates the resulting image and the control file for this job. If you click on "No", the Merge program only creates a .len-file, if necessary. If, for example, you only want to engrave one image, the Merge program will not create a new .len-file, but instead uses the existing original image.

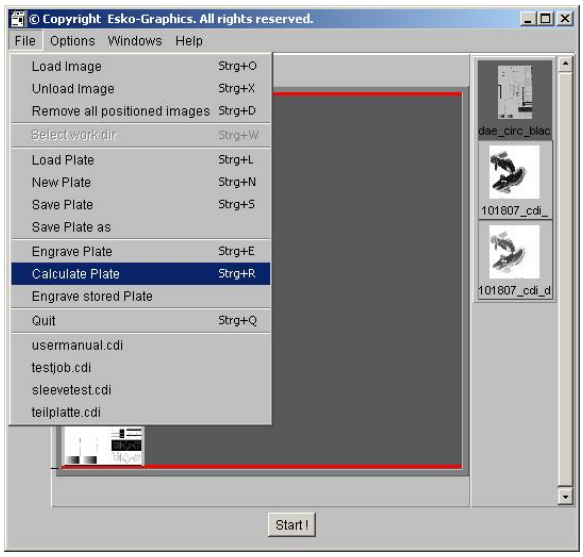
A general rule is to always click on "OK", if the resulting image is to be examined, e.g. with the Screen View program.

2-4 Starting a job

When a job is started, the Merge program creates the resulting image and a parameter file and sends these to the engraving server (CDI) via a network connection.

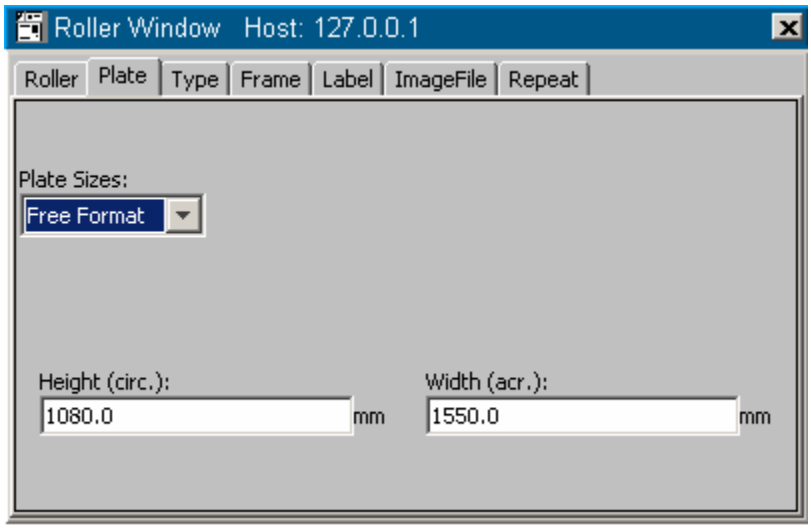
The job is started by clicking on the "Start" button on the bottom of the Merge window, or by selecting the "Engrave Plate" function in the "File" menu.

Note: If the Start button is hidden, e.g. by the Windows task bar, the Merge window must be reduced in size or moved.

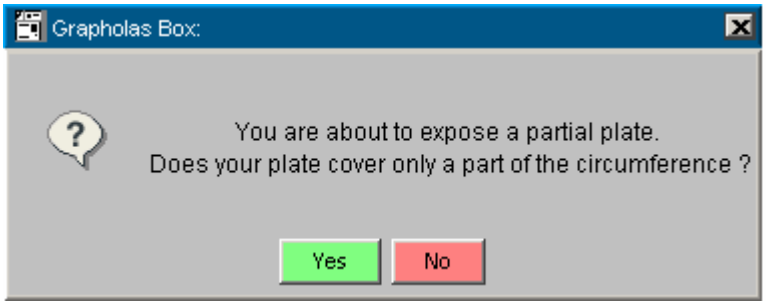


Next, the program asks for a job name.

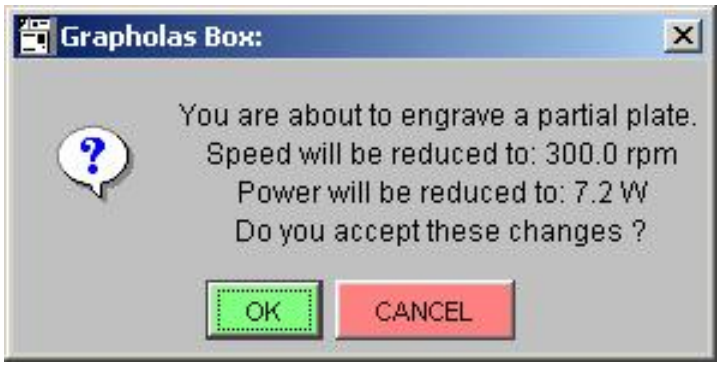
If the job has to run as partial plate select “free format” in the Roller Window:



After pressing „Start“ the dialog box askes if the partial plate covers only a part of the circumference:



Finaly the resulting RPM and Power is displayed:


Grapholas Box:
You are about to engrave a partial plate.
Speed will be reduced to: 300.0 rpm
Power will be reduced to: 7.2 W
Do you accept these changes ?
OK
CANCEL

If you click on "OK" here, the job is sent off.

2-5 Positioning the images

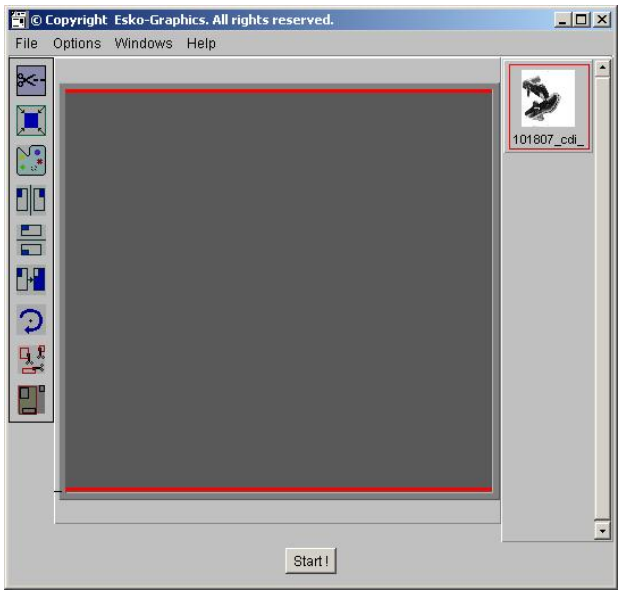
All images that are to be illustrated by the CDI must be positioned on the representation of the plate in the Merger.

This chapter explains how to do this.

Note: You can load images to the toolbar and not position them on the plate. In this case they will be ignored during illustration.

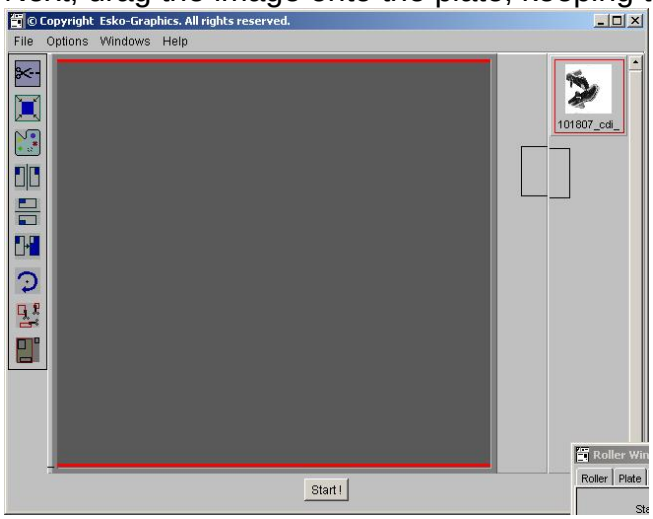
After you have selected the images you wish to load (see section "Loading images"), the images are loaded into the Merge program. These images are represented by miniature views in the toolbar:

The miniature view of an image is calculated when it is loaded. After an image has been loaded and the miniature view has been created, you will see the following:

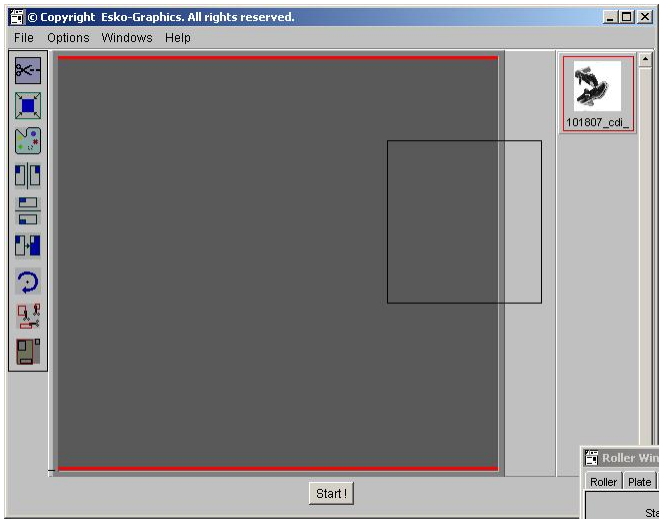


You can now begin positioning it on the plate. To do this, move the mouse pointer to the image in the toolbar and press the left mouse button.

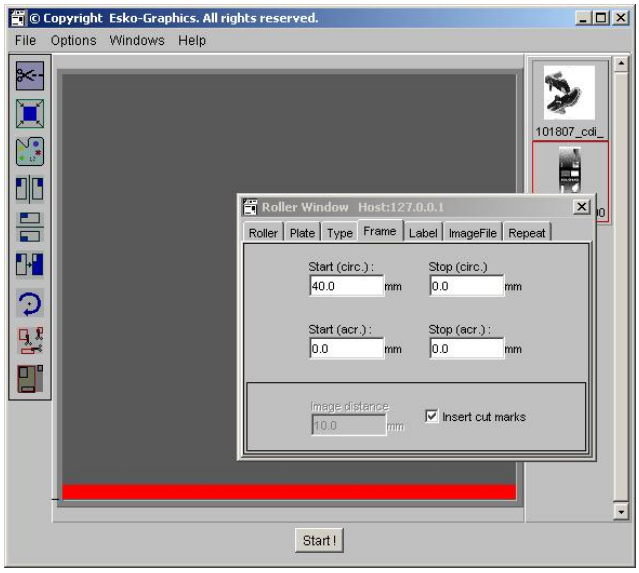
Next, drag the image onto the plate, keeping the left mouse button pressed:



As soon as the image is dragged over the edge of the plate, the image's actual size in proportion to the plate is displayed:

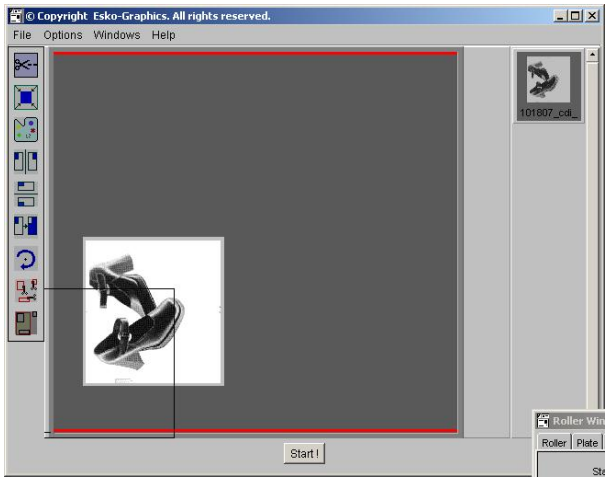


When the image has reached the desired position, the left mouse button may be released. The image is now displayed on the plate:

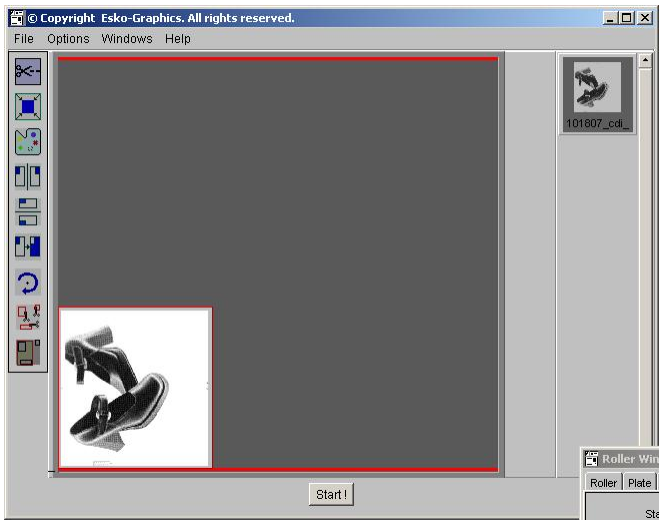


The CDI illustrates faster in the circumference direction than in the advance direction (axially)
This is why as many images as possible should be in vertical direction (roller circumference).

Always begin positioning on the left-hand side. Using this procedure, positioning should occur as follows:



You may notice that the image (represented as a black frame) was pulled too far to the left and bottom. If the image is dropped here, it is in an invalid position, as it protrudes over the plate's edge.
The Merge program is capable of independently correcting this position. It will move the image to the next available position on the plate, i.e. in this case to bottom left corner of the plate:



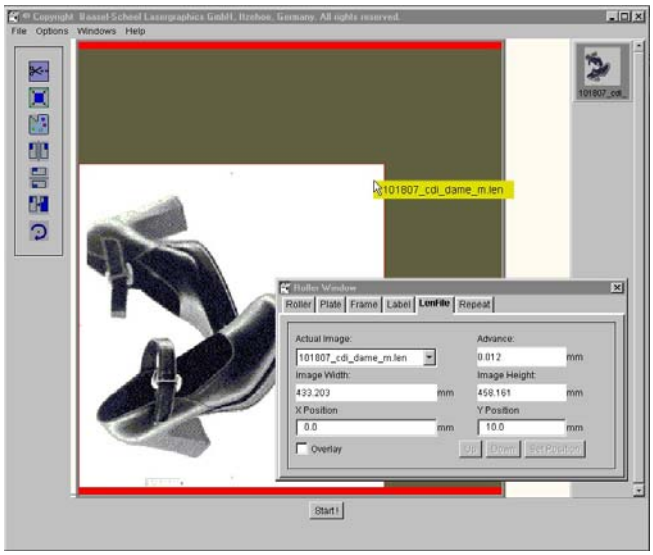
The same holds true if several images are positioned on top of each other. The Merge program will then position them next to each other (without overlay), provided there is sufficient space on the plate. This type of behavior on behalf of the Merge program is also referred to as "semi-automatic positioning".

Note: Images that have been dragged to the plate from the toolbar will be displayed darker in the toolbar.

To remove an image from the plate, simply drag it off of the plate. It will then return to the toolbar.

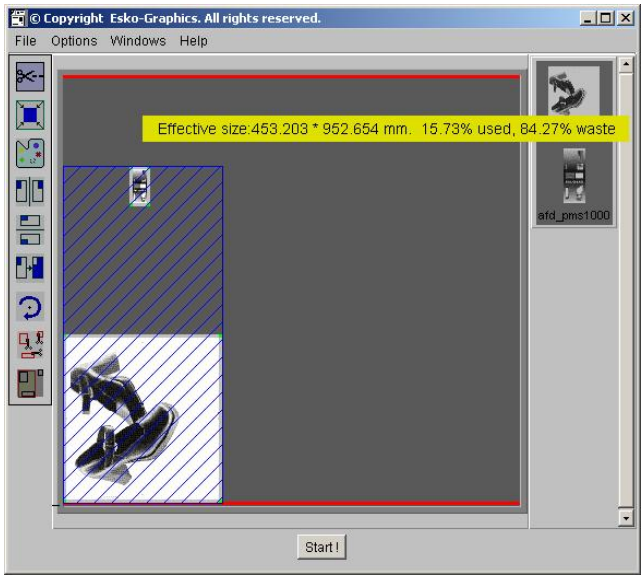
Right-click on an image to view its full file name and image information. It does not make a difference if you click on the image in the toolbar or on the plate.

The following illustration shows a corresponding example with an image positioned on the plate:



Note: The roller window is currently deactivated, in order to have a better view while positioning the images. Chapter 2-2-3-1 explains how to open this window again. (Click on "Windows" -> "Roller Window".)

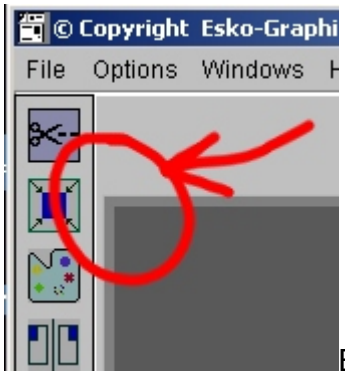
If you right-click on a free area on the plate, the used plate surface is displayed:


© Copyright Esko-Graphics. All rights reserved.
File Options Windows Help
Effective size:453.203 * 952.654 mm. 15.73% used, 84.27% waste
afd_pms1000
Start !

This is very useful for calculating the illustrated area or the plate material still available.

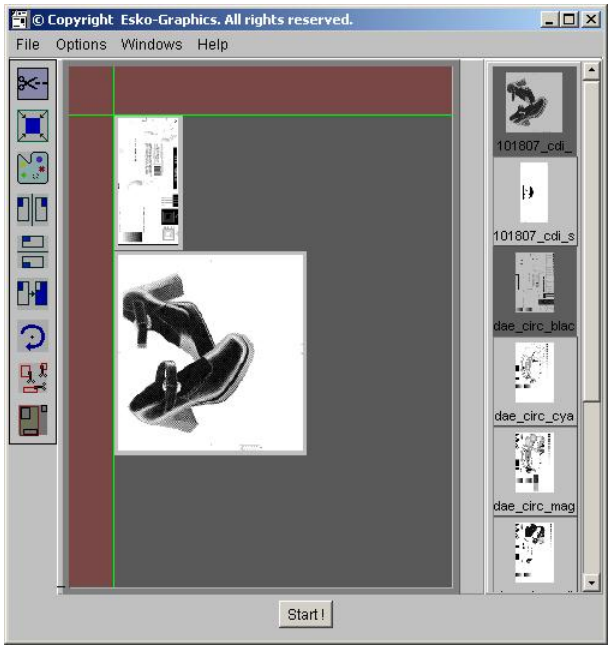
2-5-1 Positioning with auxiliary lines

4 auxiliary lines may be dragged from the plate representation's frame, using the left mouse button. (Keep the left mouse button pressed and move the mouse.)



Example for the top left frame area.

Here is an example with 2 activated auxiliary lines:



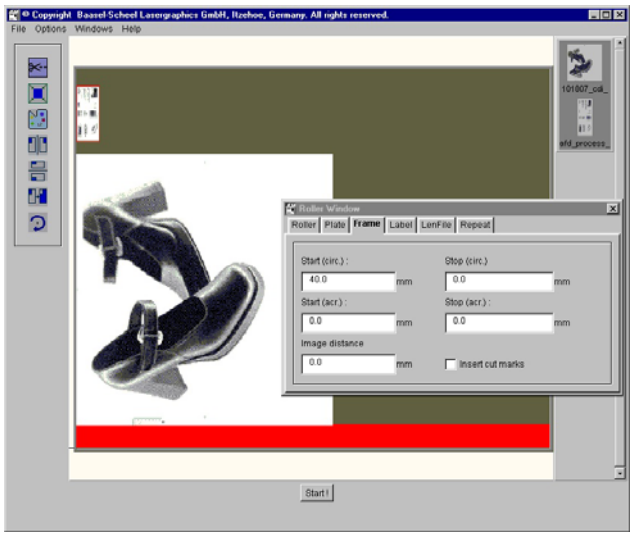
These auxiliary lines may be used to position images manually, in such a way that the plate can be cut easily. They can also be used to provide access to only one area of the plate.

To deactivate the auxiliary lines, click on the blocked area (pink) and drag the line back to the frame.

2-6 Use of frames in the Merge program

You can use 5 different frames for the plate.

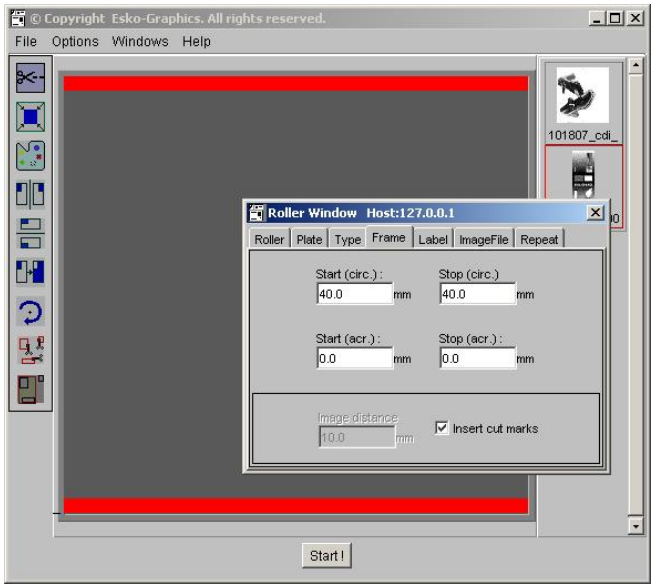
2-6-1 Starting frame in circumference direction



In the roller window the tab "Frames" was opened, and the value 40.0 mm has been entered. Because of this, a red bar is shown at the bottom of the plate. This is now a reserved area, in which images may no longer be positioned.
The red frame on the top and the bottom represents the area on the flexo plate that cannot be illustrated. This is usually the area for the tape (to attach the flexo plate to the roller) or the roller's terminal strip.

Note: If you have changed the value for one of the frames, you may have to reposition the images!

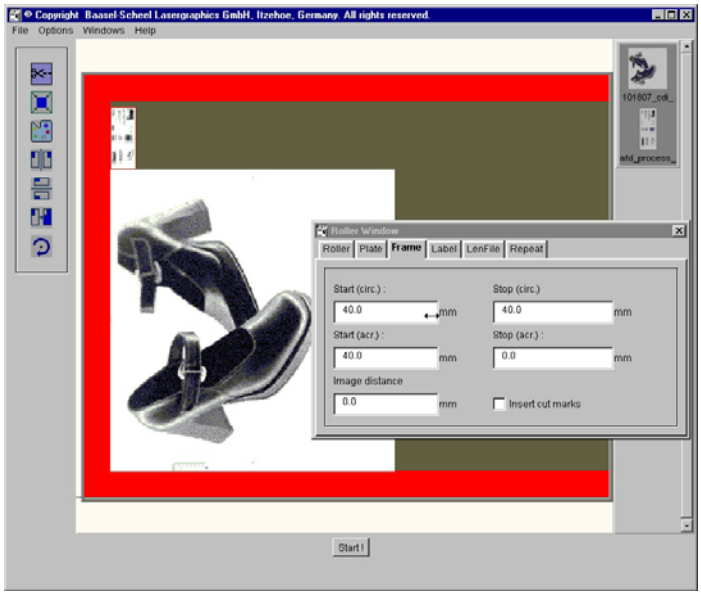
2-6-2 Stopping frame in circumference direction



Use this stopping frame to reserve an area at the top of the plate. In our example, we have also used a value of 40.0 mm.
This value is entered in the roller window's "Frames" tab.

This frame's purpose is also to avoid burning the plate's attachment strap.

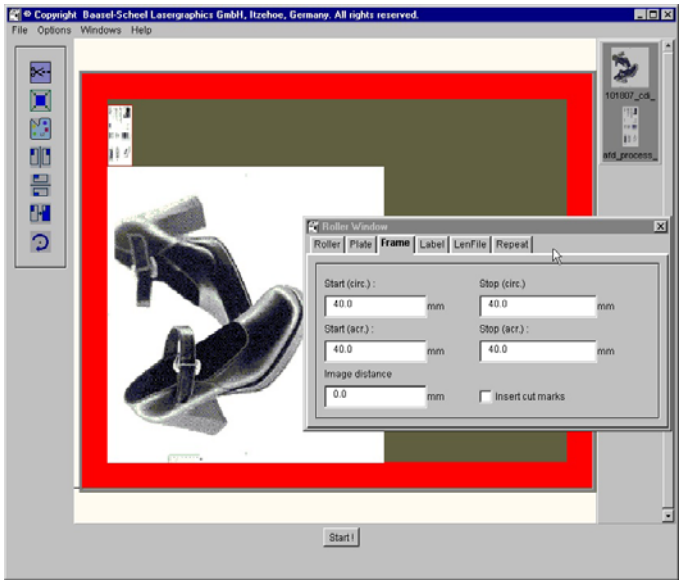
2-6-3 Starting gap in advance direction (x)



The starting frame in advance direction is also used to keep an area free at the beginning of the engraving process, e.g. to protect the tape.

Note: The advance gaps are not used frequently; move the engraving head to the correct starting position instead!

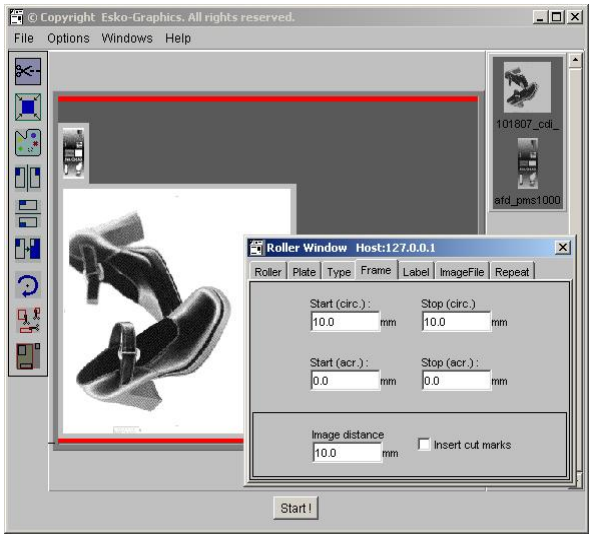
2-6-4 Stopping gap in advance direction



Here, the stopping gap in advance direction has been set to 40.0 mm. This gap is also displayed as a red rectangle on the plate.

2-6-5 Frame around the image

This is an important safety distance, which lets you define a frame around every positioned image. These gaps are used to avoid cutting the engraved pictures when the plate is cut.



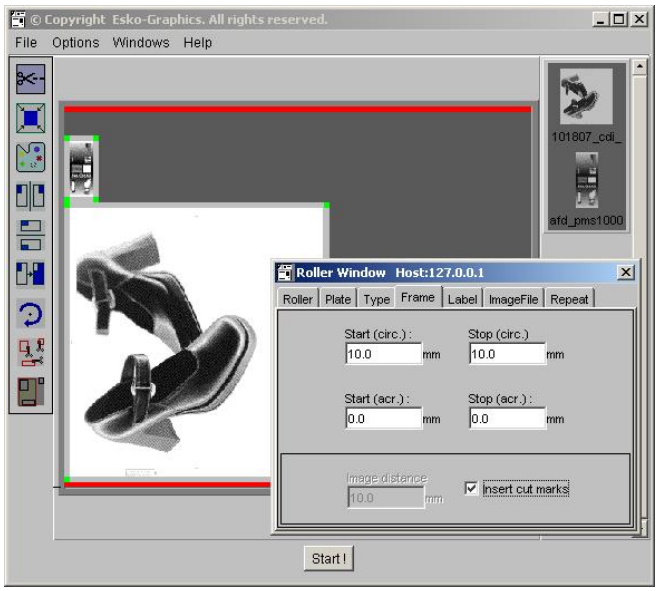
If you have a look at the illustration above, you will see that each image is surrounded by a gray frame. On the tab "Frames" in the roller window, the value for the image gap is set to 10.0 mm, and this distance of 10.0 mm is applied to all 4 sides of each image. The 10.0 mm gap for clean cutting is merely an example for this option. Of course, this value may be reduced.

2-6-6 Inserting cut marks

Another possibility to ensure that the flexo plate is cut safely, is to insert cut marks.

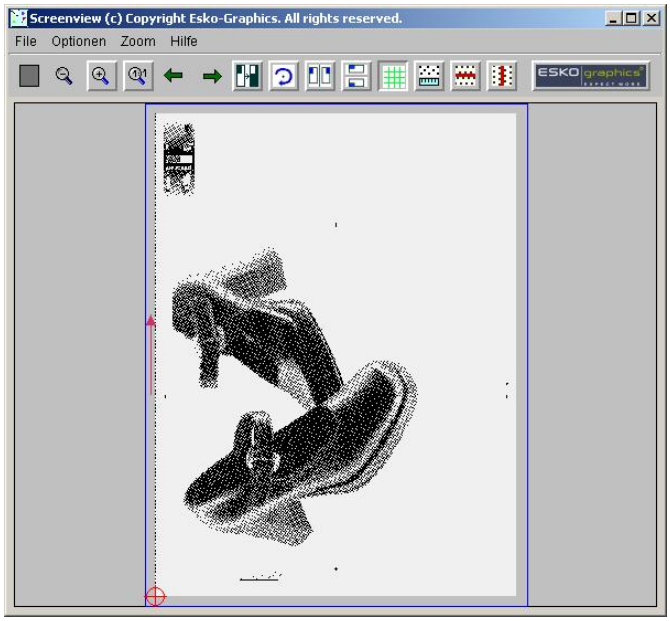
In this case, this option makes sense. If the box "Insert cut marks" is checked, a fixed frame of 10 mm is applied to every image, and a cut mark is placed on all four corners of the frame.

Here, the "cut marks" are represented by small green boxes.

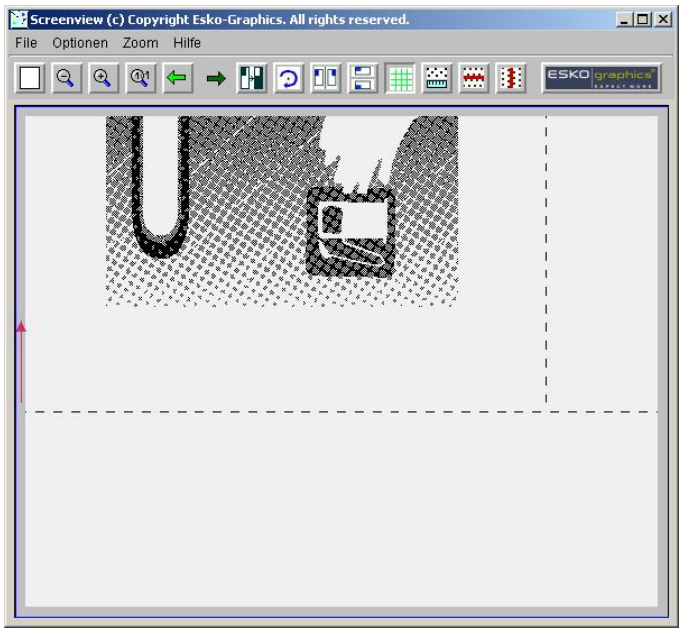


The next illustration shows how cut marks look after the engraving process has been completed:

In this case "Screen View" was used to create a view of the image created for FlexProof. The following illustration first shows the entire calculated resulting image:



The next illustration now shows an enlarged view in which the cut marks are visible:



In this case the cut marks were created as dotted lines. The operator can then cut exactly along these lines to cut the plate into pieces.

There are 3 different types of cut marks:

Dotted lines

Solid lines

Corner marks in all 4 corners of the image

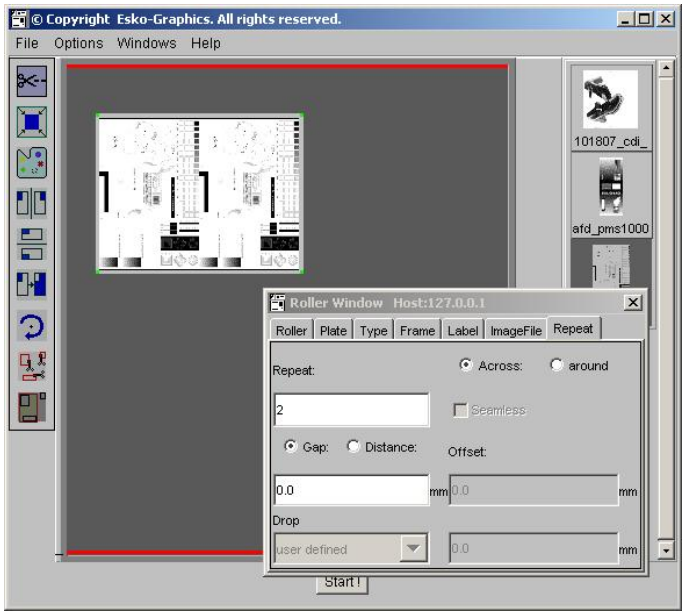
Which type of cut marks is to be used should only be determined during basic program configuration. (By the service technician.)

2-7 Step & Repeat

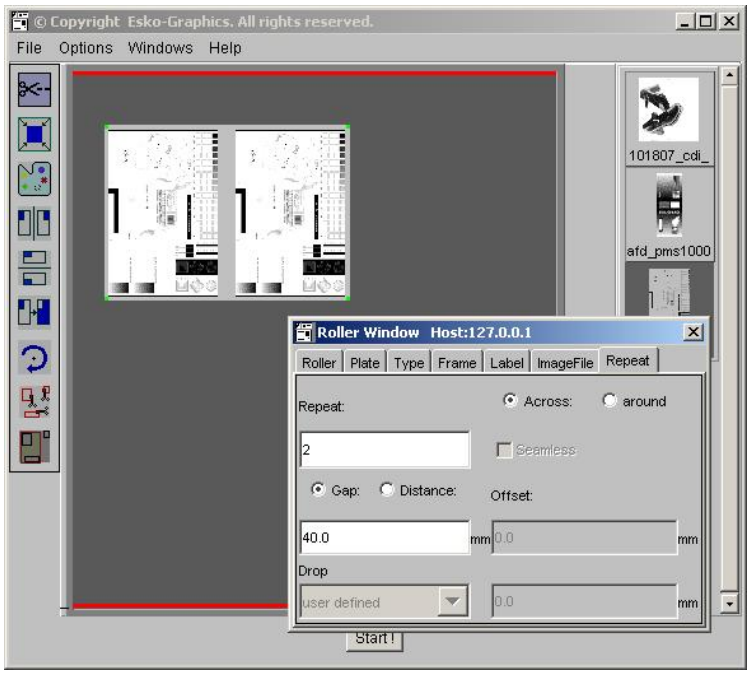
In order to repeat an image axially or vertically, select the tab "Repeat" in the roller window.
There, you can specify how often the image is to be repeated in the advance direction (x) or the circumference direction (y).

2-7-1 Repeat in advance direction

The next illustration shows an example for 2 repetitions in the advance direction:

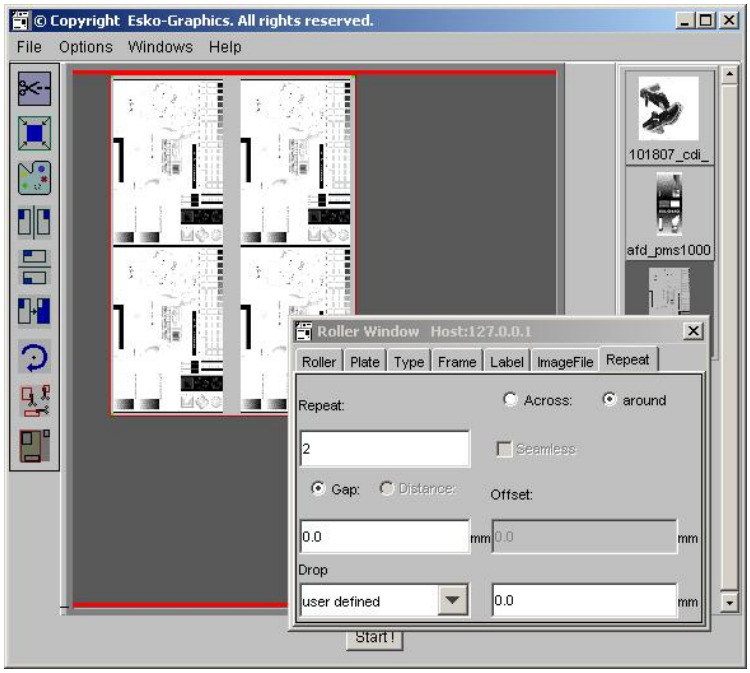


There are two corresponding radio buttons allowing you to select between "across" and "around" repetitions. In our example the option "Across" was selected and 2 repetitions were specified. If you need a particular gap between the images, specify this value in the field "Gap":


© Copyright Esko-Graphics. All rights reserved.
File Options Windows Help
101807_cdi_
afd_pms1000
Roller Window Host:127.0.0.1
Roller Plate Type Frame Label ImageFile Repeat
Repeat:
Across:
around
2
Seamless
Gap:
Distance:
Offset:
40.0
mm
0.0
mm
Drop
user defined
0.0
mm
Start!

2-7-2 Repeat in circumference direction

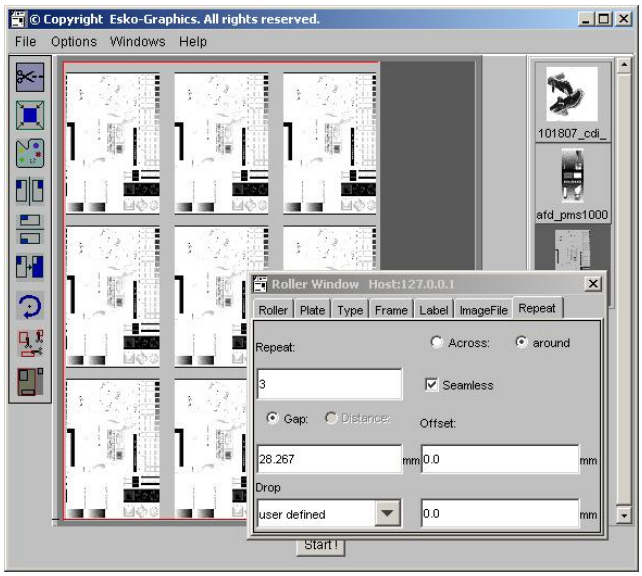
The next illustration shows an example for 2 repetitions in the advance direction and 2 repetitions in circumference direction:



2-7-3 Seamless repetitions (only for plate type "Sleeve")

Seamless engraving is only available if the machine is equipped with a "Sleeve" option. This can be verified by selecting the menu "Help"->"Info". In this case the specification ">Sleeve<" appears in the Copyright/License window: (see chapter 2-2-4).

The option "Seamless" is only available if "Sleeve" is selected as the plate type. Selecting the option "Seamless" leads to the following result: (according to our example from 2-7-2)

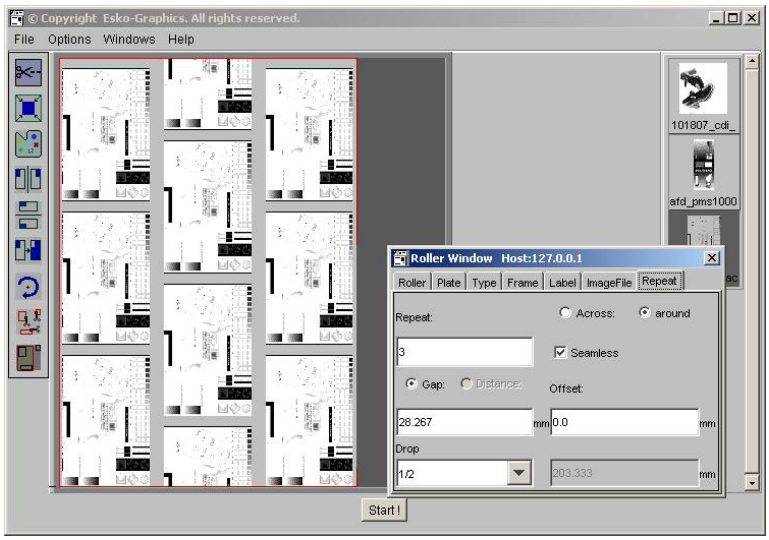


It can be seen that the image is repeated so many times until the entire height of the plate is covered. If this does not lead to a perfect fit, appropriate gaps are inserted between the individual images.
In this case, a gap of 28.267 mm was used to fill in the plate's height seamlessly.

Note: For seamless sleeve engraving the roller's circumference value must be equivalent to the plate's height! This happens automatically when you select a sleeve.

2-7-4 Drop for seamless engraving

Quite often a drop must be applied to the repeated images. This can be done by selecting a predefined drop in the drop-down list, or – if "user defined" is selected – by entering a corresponding value in the entry field to the right of the drop-down list.



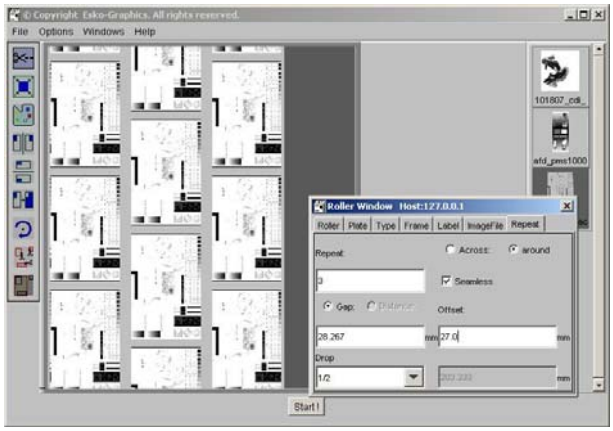
In the example above, "½" was selected as a drop, meaning that the first image of the second advance repetition is dropped by half the image size plus gap.
This option is used to avoid vibrations on the printing machine.

Note: In order to change the direction of the image drop, select "user defined" and enter a minus sign in front of the value (here: -203.333).

2-7-5 Offset for seamless repetitions

For some applications the image must be moved around the roller, in order to place the seam at a particular position on the roller circumference (e.g.: Plate-on-Sleeve).

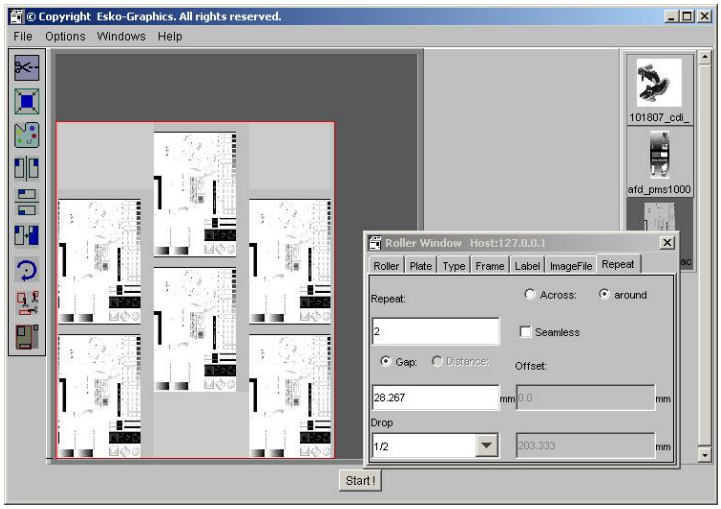
This can be accomplished using the parameter "Offset". The following illustration shows our example from 2-7-4 and applies an image offset of 27.0 mm:



Notice how the entire image is moved downward. A negative value moves the image up.

2-7-6 Drop for a non-seamless image

A drop can also be applied to an image that is not seamless:

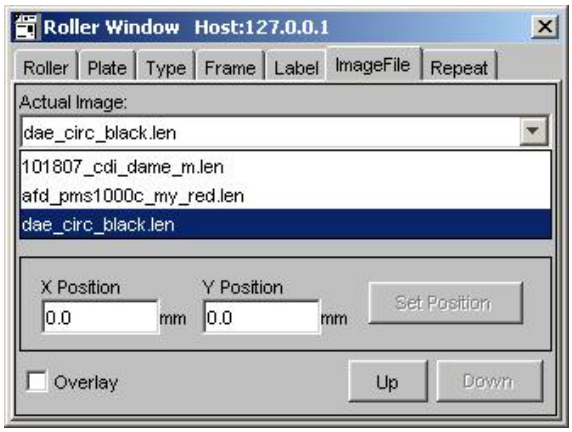


In this case you would have to cut the plate according to the zigzag pattern that is created by the repeated images, and then install them on a roller for continuous printing. This feature is also available for machines that do not have the "Sleeve" option.

2-8 Options for image positioning

2-8-1 LenFile tab

This tab displays some information on the image currently selected. In the top row there is a drop-down list containing all the images loaded into the toolbar. Click on this drop-down list's arrow button with the left mouse button to show the list of loaded images:



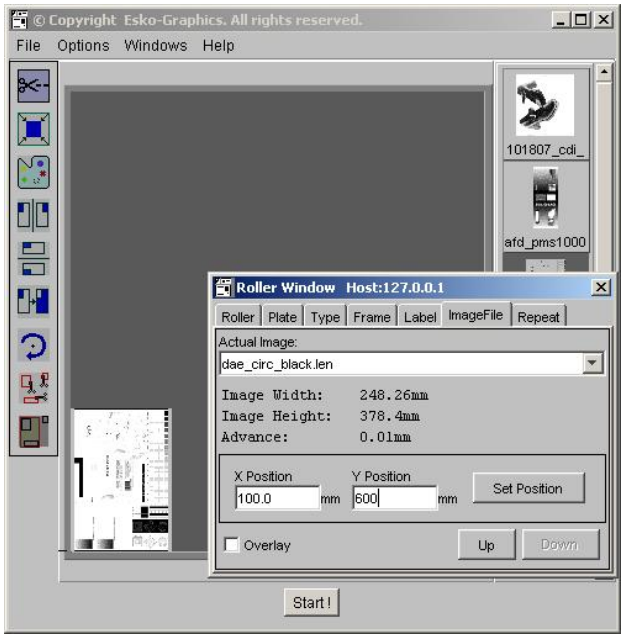
You can now select one of these images with the mouse. Another possibility of selecting

an image is to click (with the left mouse button) on an image that is positioned on the plate or located in the toolbar.
Selected images are indicated with a red frame.

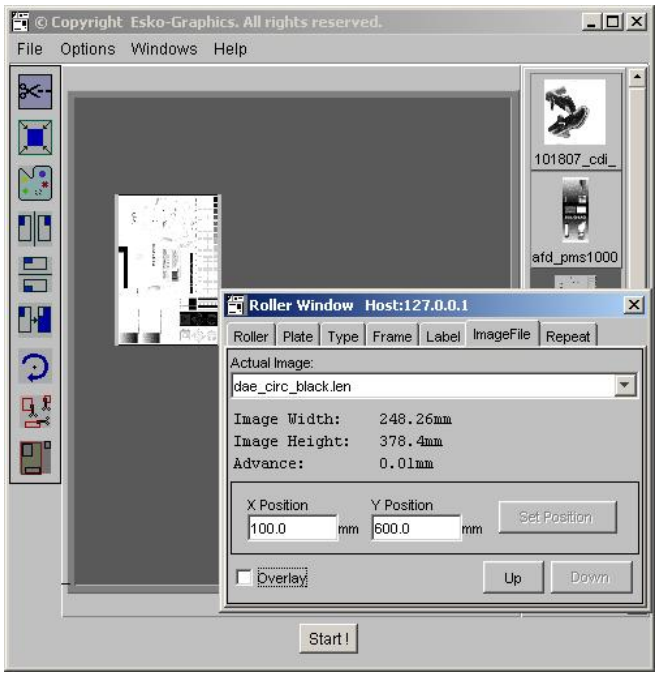
There are also 3 fields, displaying the image's resolution, width and height.

2-8-1-1 Positioning images precisely

For some applications the image must be placed very precisely. In this case, open the tab "ImageFile" in the roller window to specify the exact x and y position.



As soon as you have entered a position (here: 100.0, 600.0), the button "Set Position" is activated. Clicking on this button sets the image to the new coordinates.
Note: This is an option with several steps. The new position is not applied until you have clicked on "Set Position"!



2-8-1-2 Overlaying images

As mentioned earlier, semi-automatic positioning help you to avoid overlaying images.

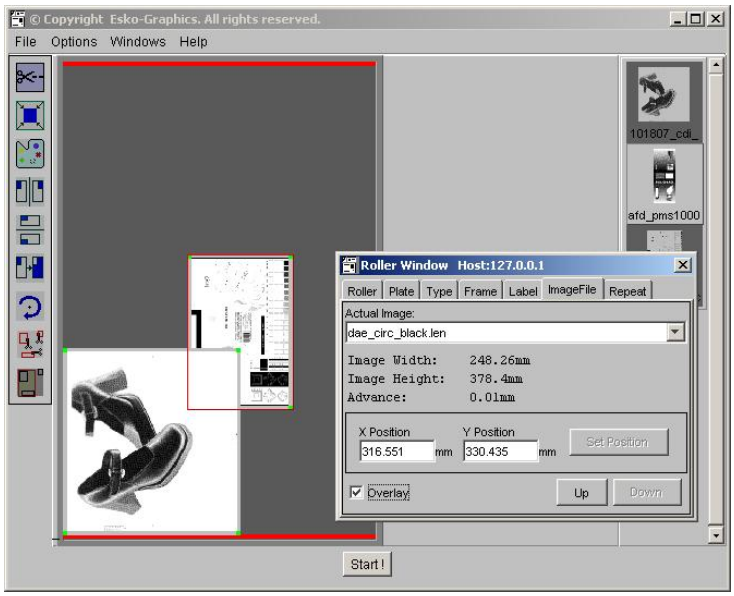
Sometimes, however, an image overlay maybe desirable, e.g. to bridge a missing millimeter (provided that overlaying the images causes no undesirable effects).

You can enable overlaying by pressing the **CTRL** key while positioning the image, or by activating the corresponding option on the "ImageFile" tab in the roller window.

Note: When the box "Overlay" is checked, overlaying is activated constantly, i.e. also when you drag an image in order to position it!

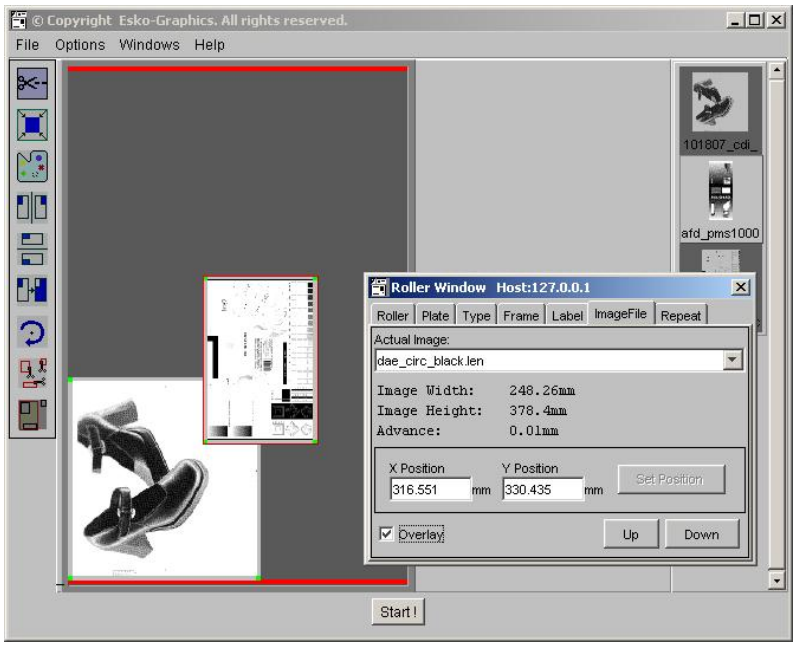
2-8-1-3 Image sequence

When images are overlayed, you must determine, which image is to be on top and which was is to be underneath. When you select an image you can select the level it is positioned on by using the "Up" and "Down" buttons.



The above illustration shows 2 overlayed images. "dae_circ_black.len" is located below the other, larger image.

Clicking on "Up" moves the small image up. The result is the following:

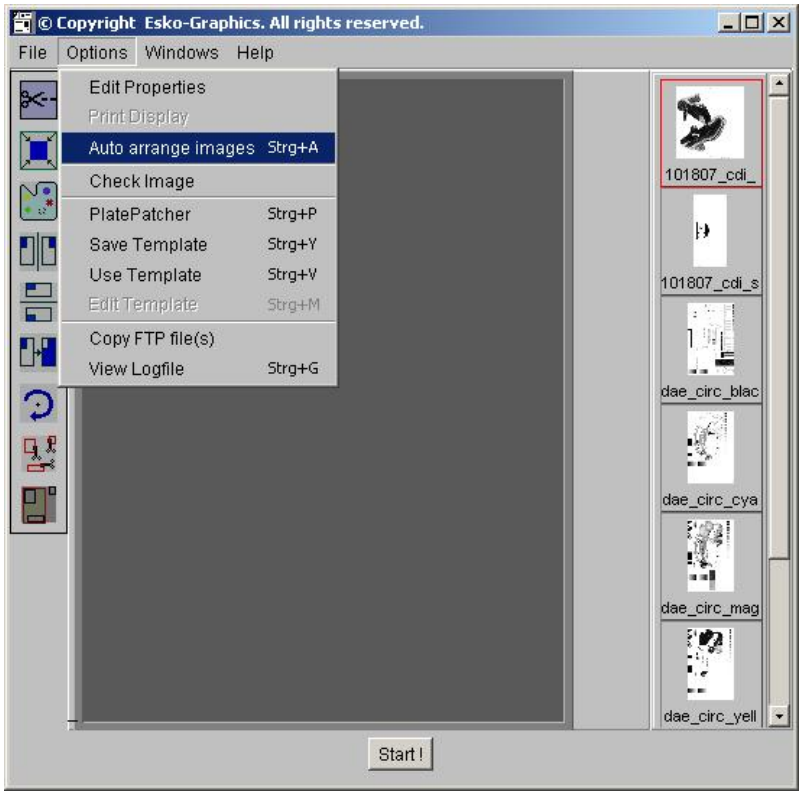


Use these two buttons to move the selected image one level up or down.

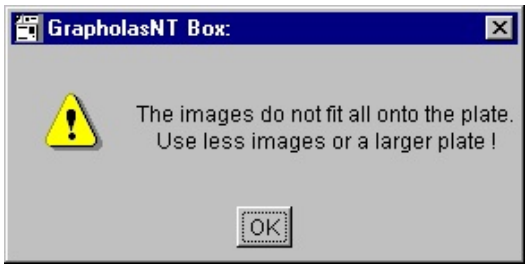
2-8-2 Auto arrange images

This option may be used to position the loaded images automatically. The feature arranges the images in a way that optimizes the use of the plate.

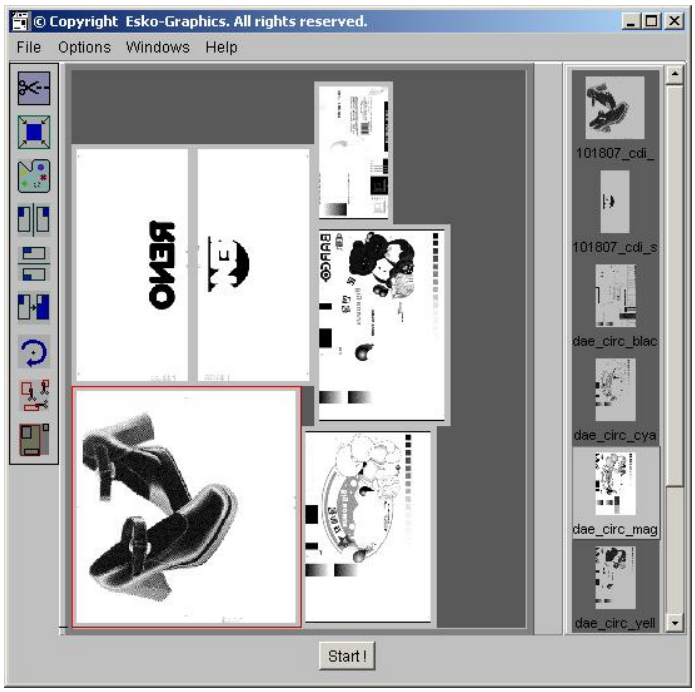
The following illustration shows how this option is started:



The image does not fit on the plate completely. The Merge program therefore sends a warning message as soon as it has completed its calculation.



The Merge program presents the following result:



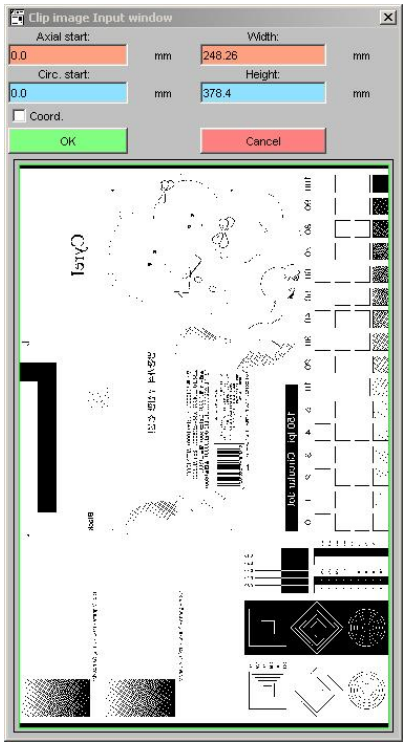
There is only one image left in the toolbar, all others fit onto this plate.

2-9 Cropping images

This button represents the "Crop" feature.

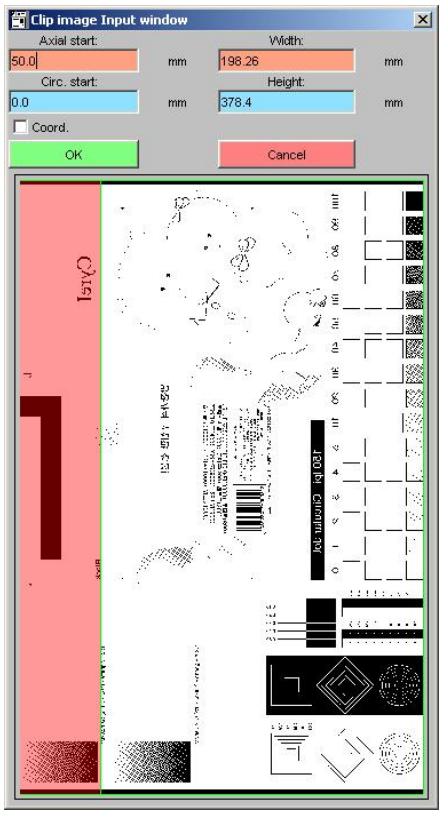
In the following example the image "dae_circ_black.len" was selected and the button "Crop" was clicked:

The "Image clip input window" displays the image's dimensions as well as the image itself.

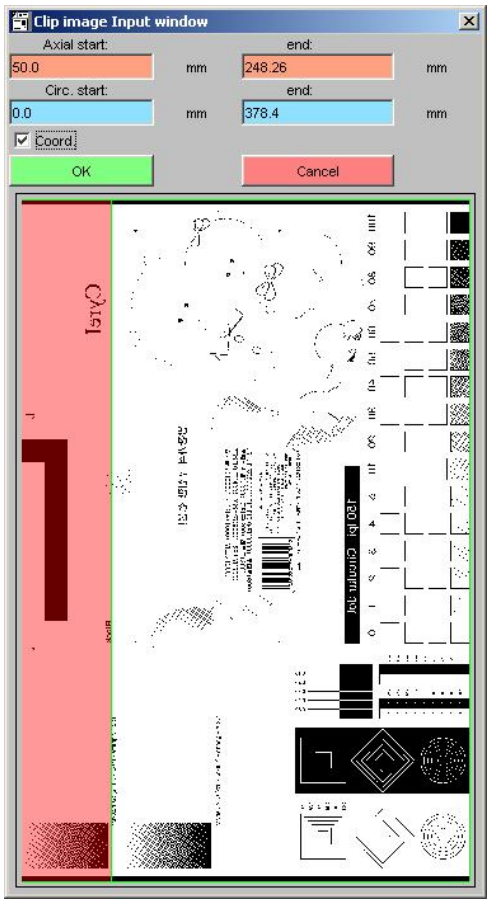


There are 4 input fields:
"**Axial start**" (where the image clip's starting position will be),"**Width**" (the width of the new image),"**Circumference Start**" (the image clip's starting position in the circumference direction), and"**Height**" (new height of the image clip).

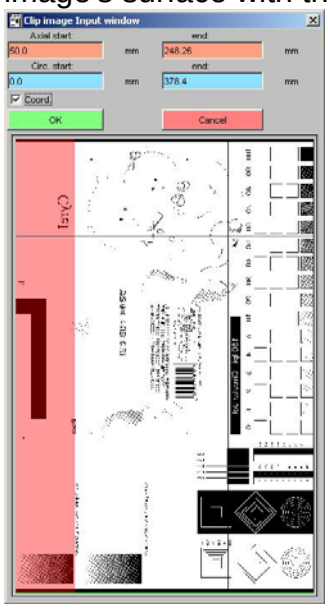
When you enter a starting position, the remaining width is adjusted accordingly:



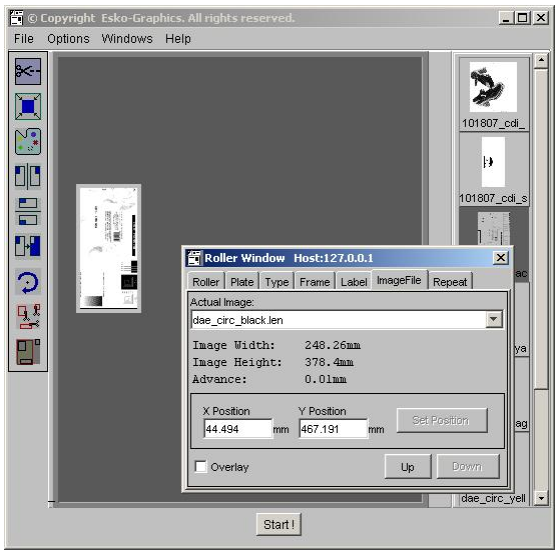
The cropped part of the image is shown in red.
If the box "Coord." is checked, the ending position of the image clip is displayed or entered instead of width and height.



Instead of cropping the image using the input fields, you can also select an area on the image's surface with the mouse:



In this case we began in the top right-hand corner and pulled the area to be cut out towards the bottom left corner.
As you can see in the following illustration, only the selected cut-out area is displayed in the Merge program.



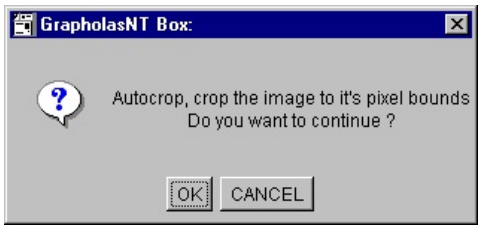
Note: The roller window's "ImageFile" tab always shows the maximum image dimensions, i.e. not the cut-out's dimensions.

Please note that these settings apply only within the Merge program. The image file on the hard drive has not been modified. If you open the cropped image from Merger using Screen View, Merge sends the image together with the cropping parameters, i.e. Screen View displays only the part of the image that was cut out. This option was introduced newly in Grapholas 5.0.

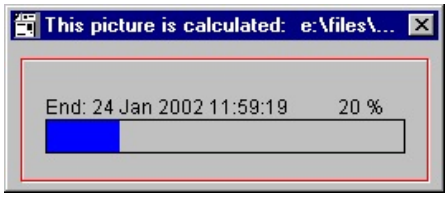
2-9-1 Automatic image cropping

This option removes all empty areas around the image. Black pixels are not deleted. This option is used, for example, if the image for some reason has an empty border, or in order to save plate material.

The illustration above shows how to run this option. Next, you will be asked, if you want to continue:

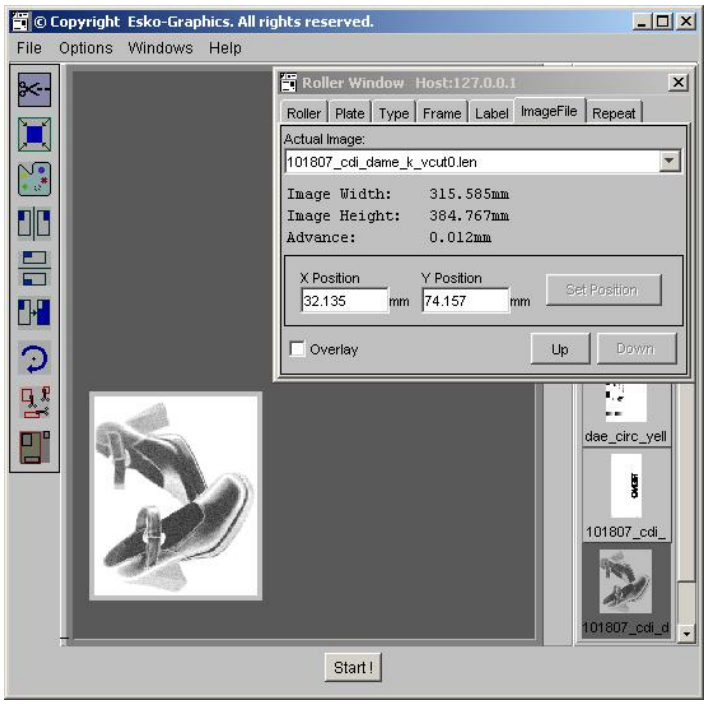


After this, a progress bar displays the image calculation status:



After the image has been processed, you are asked, if the original file is to remain on the plate or if is should be replaced by the new, cropped file:

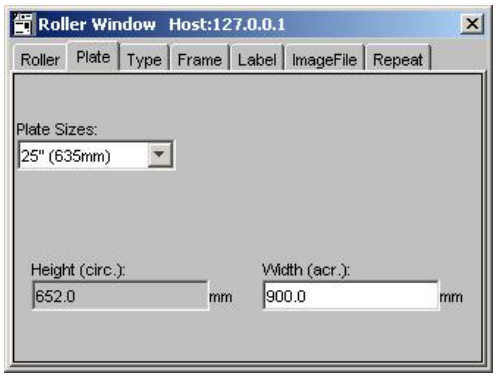
If you click on "OK", you will see the new, cropped image:



In our example there are no registry marks to the left and right of the image, so the Automatic Image Cropping has reduced the size of the new file slightly.

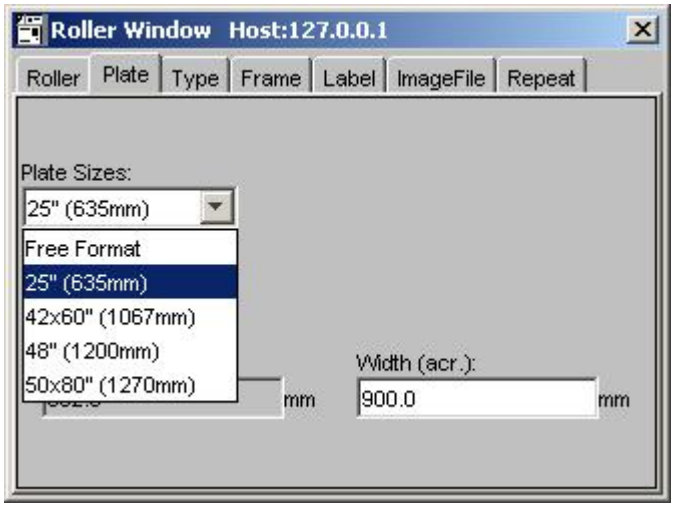
2-10 Setting the plate size

You can specify the width and height of the plates you use in the Merge program. For this, you can use the roller window's "Plate" tab.



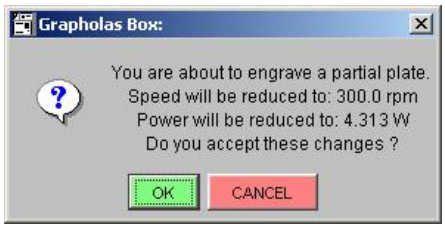
Height and width are set in the two text fields on the bottom. When you enter a new value, the size of the plate representation in the Merge window is adjusted immediately.

In the upper part of the card you can see a selection box with various predefined plate sizes:



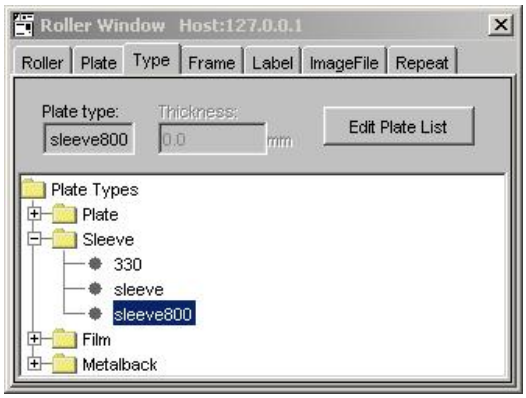
The circumference sizes of various plate formats are provided here. Apart from these options, there is the entry "Free Format". When this option is selected, the Merge program assumes that a partial plate is to be engraved.

For partial plates the number of revolutions is reduced to a safe value and the laser power is automatically reduced accordingly. The Merger also assumes partial engraving when a small default format is used on a large roller. In any case, the user is notified with the following warning message that the current job is a partial engraving:


Grapholas Box:
You are about to engrave a partial plate.
Speed will be reduced to: 300.0 rpm
Power will be reduced to: 4.313 W
Do you accept these changes ?
OK
CANCEL

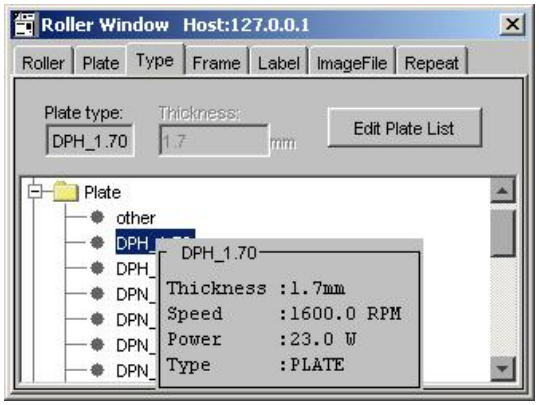
2-11 Selecting the plate type

The plate type is selected using the tab "Type".



This tab includes predefined plate types, displayed in a tree structure. Depending on the machine type, there are up to 4 material categories. To select a material, double-click on the appropriate category and then simply click on the desired plate type using the left mouse button. The plate list is sorted alphabetically.

Right-clicking opens a small information window:



This shows the values for machine speed and laser power stored together with the plate material.

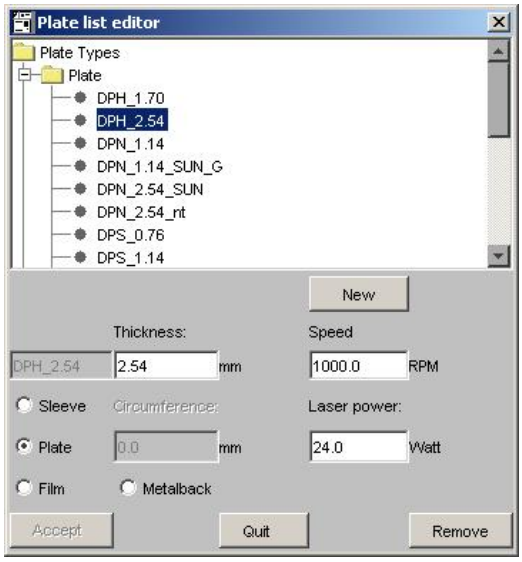
When you select a plate type, these values are captured as engraving parameters. See also: Setting "Engraving Parameters".

After you have selected a plate, the corresponding plate thickness is displayed in the field "Thickness".

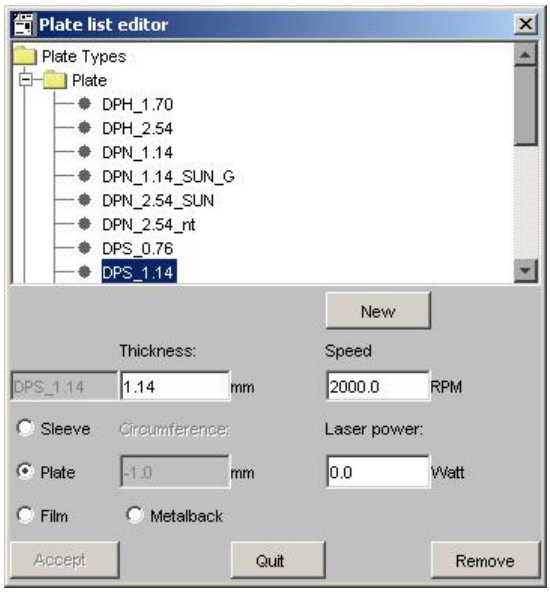
To change the plate list settings, click on the "Edit Plate List" button. See also: Editing the plate list (2-11-1)

2-11-1 Editing the plate list

This tool is used to modify, add or delete entries in the plate list.
The corresponding window looks like this:



If you want to edit an existing plate, select it in the tree structure of existing plates by clicking on it with the left mouse button.
The selected plate's values appear in the window's input fields:



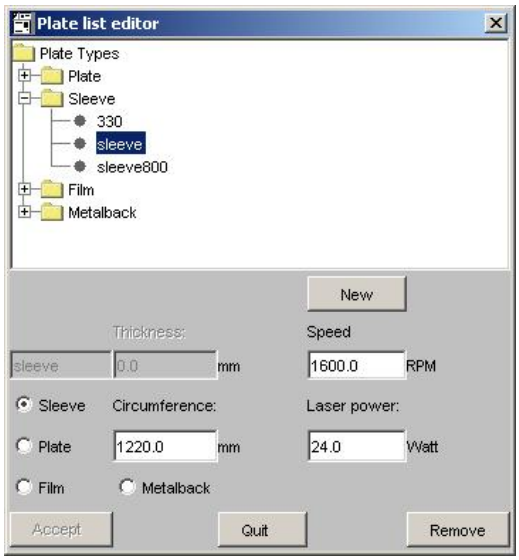
Here, you can modify the name, thickness, speed and laser power of this plate. You can further select, whether the plate is a "Sleeve", "Plate", "Film" or "Metalback".
Note: Depending on the present machine type, not all plate types may be available!

When all values are okay, click on "Accept", in order to transmit the new values to the server's plate reference file.

If you want to delete a plate from the reference file, select it and click "Remove".
Click on "New" to create a new plate entry, enter the corresponding values and then click on "Accept" to add the new plate to the reference file.
Leave the plate editor by selecting "Quit".

2-11-2 Creating an entry for sleeves

For machines equipped with the sleeve option, the plate type "Sleeve" is definitely available:



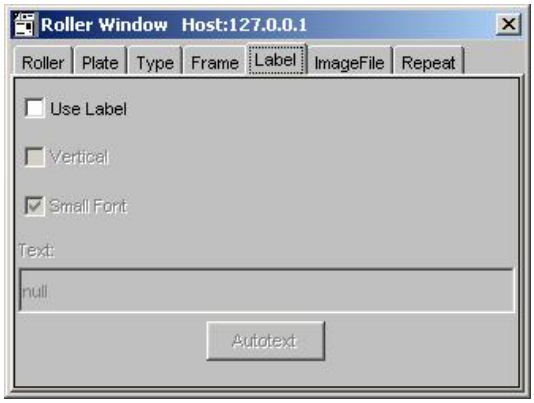
Here, you will also find an input field for the sleeve's circumference. The above illustration shows such an entry for a sleeve.

Note: An entry in the plate list with a thickness of 0.0 mm is a sleeve entry!

2-12 Labelling options

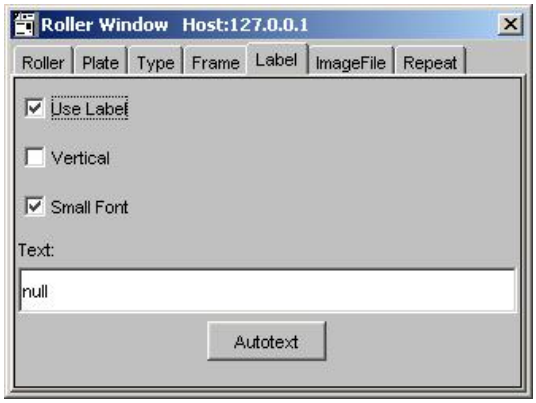
There is now also the possibility to engrave an image label onto the plate together with the image itself. This may be an order number, the image name, a date, etc.

If you select the tab "Label", you will see the following:

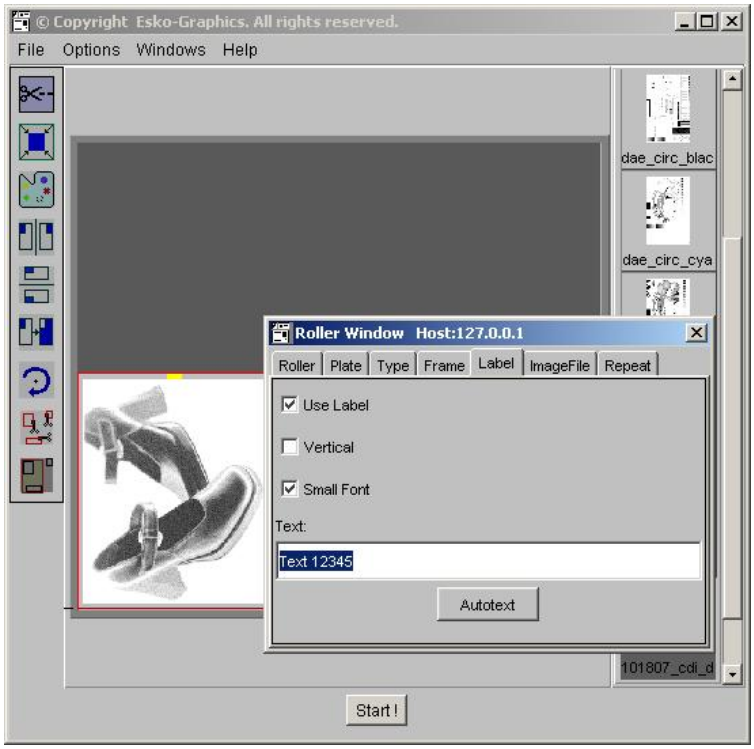


The option "Use Label" has not yet been selected, so no text will be added to the image.

In the following illustration the option "Use Label" has been selected:



Now the text can be entered:



A yellow bar appears on the middle of the upper image frame. This marks the position where the label text will be shown.

The option "Vertical" lets you determine, whether the text is to be inserted horizontally, as in this example, or vertically.

The option "Small Font" allows you to select between a small and a large font for the label.

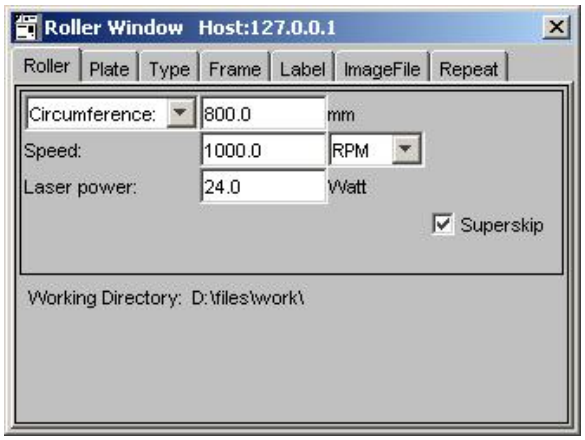
"Autotext" generates a label text using the image name and the date. In many cases it is sufficient to use this option, rather than having to invent your own text.

If you are conducting a set of test engravings it may be a good idea to include labels, in order to record engraving parameters (speed, laser power, etc.) directly on the plate.

2-13 Setting engraving parameters

Having positioned all images, we must now define several parameters telling the machine how to engrave this job.

In the chapter "Setting the plate size" you have already seen how to set the plate's size and type.
You must now check circumference and speed on the roller window's "Roller" tab.

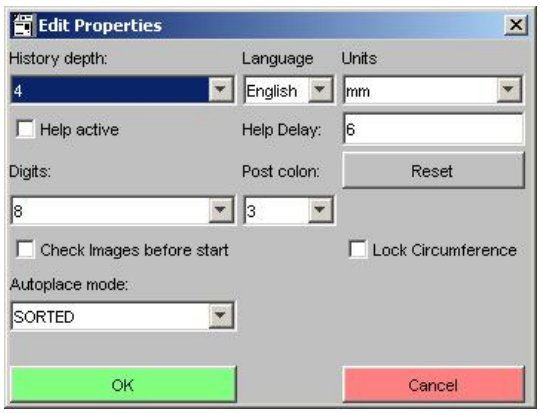


In the field "Circumference" you must verify that the value matches your machine's circumference. You should then check whether the value in the field "Speed" is okay and adjust it, if necessary.

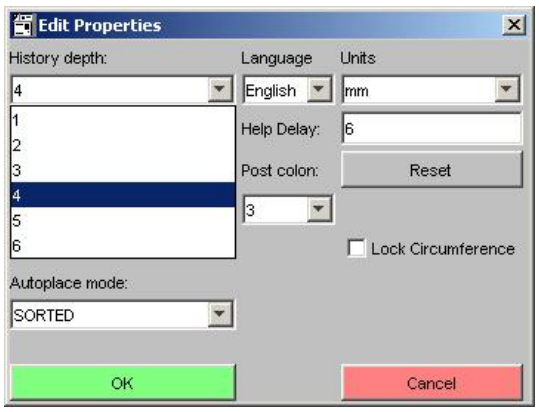
After you have set all engraving parameters, you can start the job.

2-14 Editing properties

This window allows you to modify some of the Merge and Expose programs' properties.

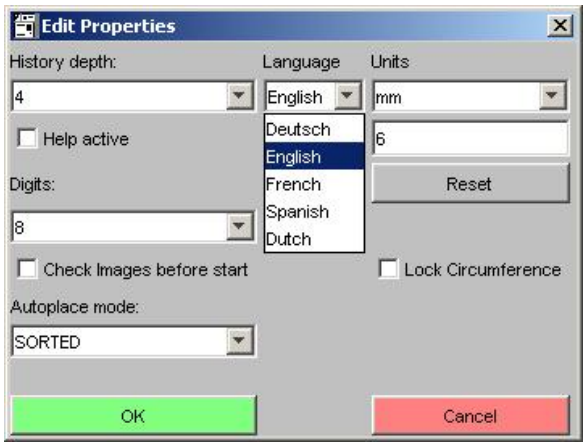


"History depth" allows you to determine how many past jobs are to be displayed in the "File" menu:



You can choose to display up to 6 entries.

The next drop-down list allows you to set the language for the Grapholas® program's interface:

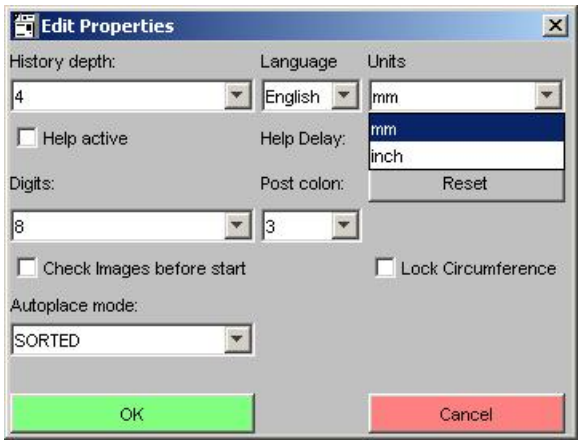


Currently, the 5 languages shown above are available.

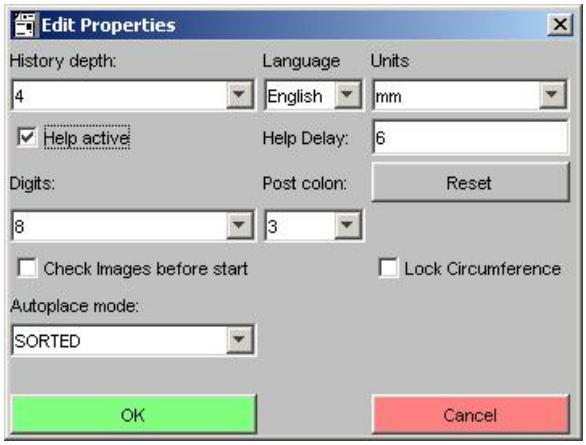
Note: This language setting applies to the programs Expose and Merge. New language settings for Expose are not applied until the program is restarted.

The Dutch language version is a mixture of Dutch and English. This language version will soon be revised!

The next drop-down list allows you to define the units of measurement that are used:

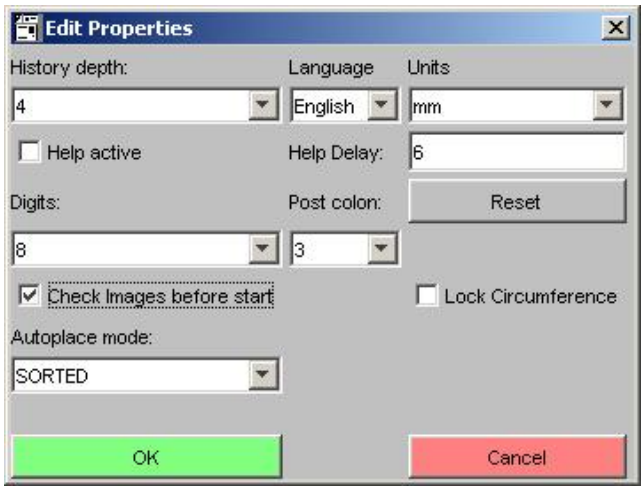


The units "mm" and "inch" are available.

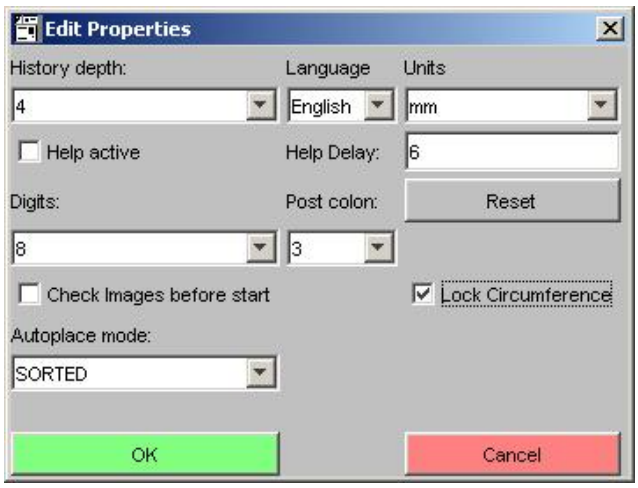


On the left-hand side of the next row, QuickInfo can be activated and deactivated by checking the "Help active" box.
If this help option is activated and you hover the mouse pointer over one of the program interface's control elements for a while, a little yellow field with a brief explanation appears.
In the field "Help delay" right next to it you can determine, how long the mouse pointer must hover above a control element before QuickInfo is displayed.
"Digits" lets you determine the number of digits before and "Post colon" the number of digits after the decimal point.

The check box "Check Images before start" activates / deactivates the control feature. When this box is checked, the Merge program runs the test that is also carried out when "Check Images" is selected in the menu bar. (See 2-2-2)

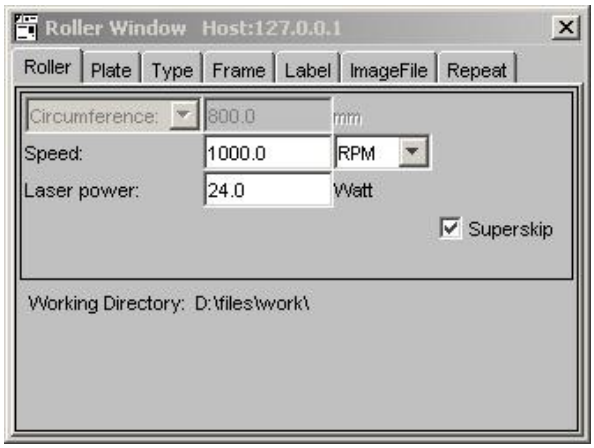


The next function, "Lock Circumference" is used to deactivate the entry "Roller circumference" in the roller window.

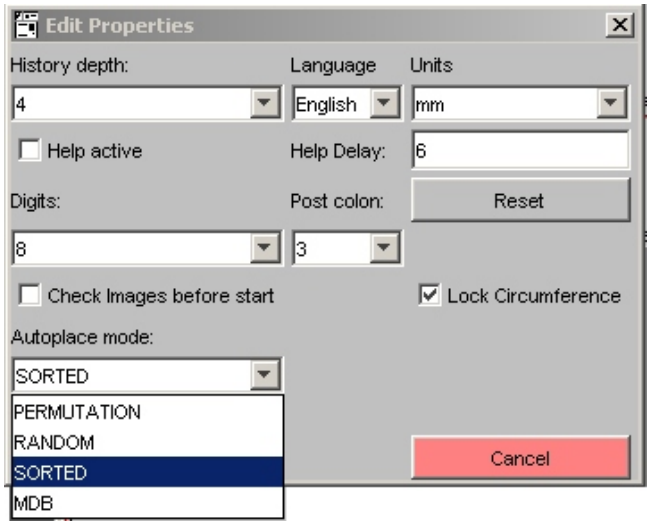


This way the circumference value can no longer be overwritten accidentally:

You can recognize that the input field is deactivated, as the field is "grayed in" together with the unit of measurement.



The last setting option refers to the way the automatic image positioning works:



Here, you have a choice of 4 options: "Permutation", "Random", "Sorted" or "MDB". All 4 options result in a slightly different application of the automatic positioning. "Sorted" is the option used most frequently. The "MDB" algorithm has been newly included in version 5.0. It tries to arrange the images in a way making it as easy as possible to cut them apart.

The input field "digits" allows you to specify the maximum number of digits used to represent numerical values. "Post colon" determines, how many of these digits may be used after the decimal point. This becomes important if, for example, you want to modify the accuracy of the display.

In this context it is important to know that internally the Merger always operates with full number resolution. This means that the settings for "Digits" and "Post colon" only affect the display!

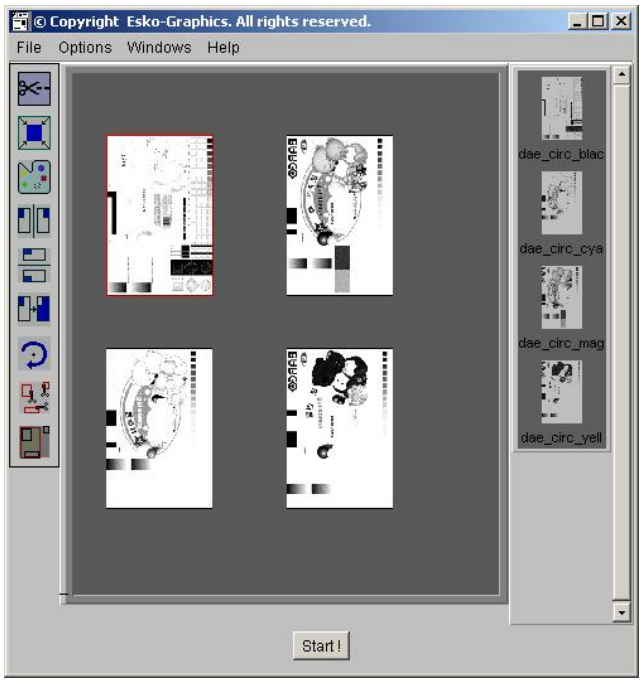
The buttons "OK" and "Cancel" are used to accept or reject changes.

2-15 Templates

Templates are used whenever images must be set to fixed, predetermined positions on a plate. The template saves the image positions as well as all other engraving parameters. As the creation of a template takes a lot of time, it is only worth doing this for jobs that are repeated many times.

2-15-1 Creating a template

In order to create a template, you first create a job. This means you select the circumference, the plate size, the plate type, you load all the images, position them and specify all other engraving parameters:



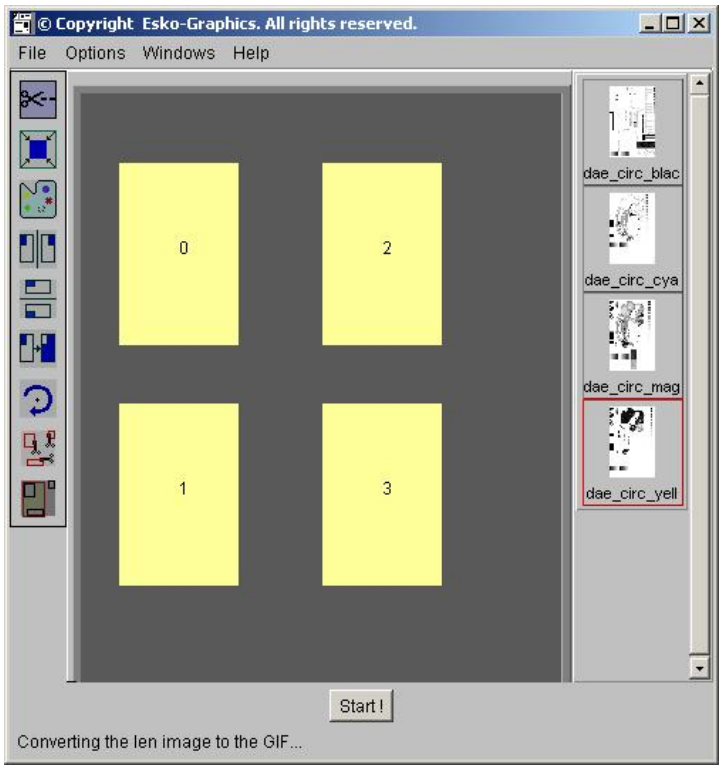
Now you can save this job as a template by selecting the menu entry "Options" -> "Save Template".

You will be prompted to provide a name for this template.

2-15-2 Using templates

In order to use a template, you first select the menu entry: "Options" -> "Use Template". This will load the template-job, but without the images used to create the job. Instead, you will see yellow placeholders on the plate.

You then load the new images that you would like to use with this template.



ATTENTION: The positioned images should NOT be modified with the merger (rotate,…)

The example above shows the empty template with new images loaded to the toolbar. You can now place the images, modify the plate type, number of revolutions and power if necessary and then start the job.

Should the new images not have the exact same sizes as the template images, there are several things you can do:

1. The images are only used if they lie within a predetermined tolerance value.
2. The images are positioned according to a placing schema.

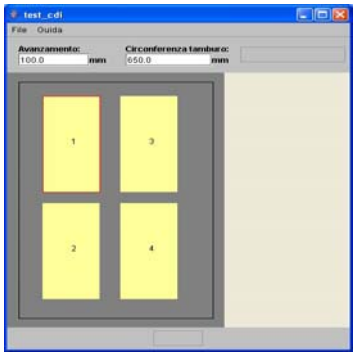
In the second case you can determine if the images are to be positioned on the top, center, etc. These settings are determined once by the technician in agreement with the user.

(guiprop.bat)

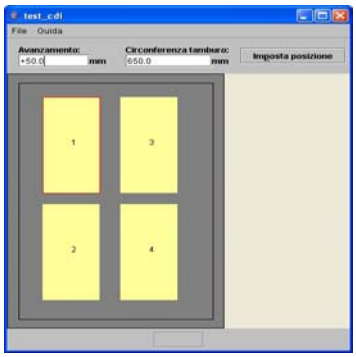
2-15-3 Modifying existing templates

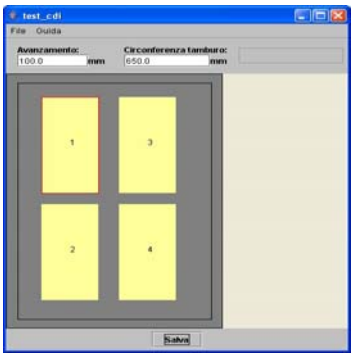
To modify a template start the template editor „tpl.bat“ in the directory c:\bsl\UI. You can

open a template with „File – Load Plate“.



Select the image you want to move and put in the new position in the “Across” or “Circumference” field. Press Enter and click “Set Position“. Optional you can put in relative values like +50 or -100. It is also possible to select more than one image to change the position with relative values.





Save the template with the „Save“-button.

CHAPTER 3 - The Expose program

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The Expose program is the interface between the user and the server program ("Gravurd").

It provides you with the basic machine controls as well as the list of jobs waiting for engraving.

These are the jobs (plates) you have created and sent using the Merge program or "PlatePrep".

The following is a detailed description of all of the components available in the Expose software.
If you are already familiar with this software, please go to the accelerated course on engraving jobs.

3-1 Job engraving procedure – a 10-step course

This accelerated course describes how jobs that have previously been created and sent using the Merge software are engraved .
We assume that the Expose software is already running:

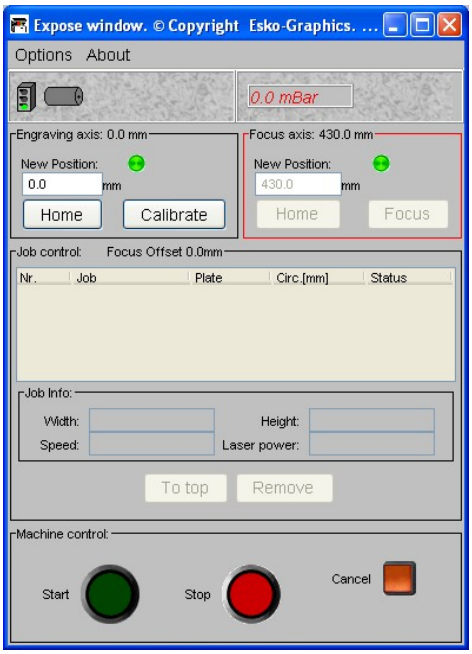
Step 1:
Please check if the job is or has been loaded and has the status "Ready" in the job control sub-window.
Step 2:
Mount a plate of the type shown in the job control sub-window and confirm "Vacuum Start" on the vacuum panel or by using the foot switch in front of the machine.
Step 3:
Press "Test" on the machine's vacuum control panel.
Step 4:
Set the engraving head to a suitable starting position on the plate.
Step 5:
Close the cover.
Step 6:
Check the status display for interlocks.
Step 7:
Verify that the roller status is set to "Idle" and click on the roller icon or remove queued older jobs if necessary.
Step 8:
Press the "Start" button in the sub-window "Machine control".
The machine now starts engraving and displays a progress bar showing the degree of job completion.
After completion, the roller status appears as either "Finished" or "Error".
Step 9:
Remove the plate from the drum and press "Stop" on the vacuum control panel.
Step 10:
You must now decide if you want to remove the job or if it is to be run again later.

And that was it. You can now start with the next plate.

The following is a detailed description of the Expose program.

3-2 Starting window

When you run the Expose program, it carries out several short initialization processes and then displays the engraving window:



The engraving window contains several sub-windows.
There is a status display in the top row:

On the left-hand side you see a traffic light showing a green light.
This traffic light remains green as long as the Expose program is connected to the server program.
Next to this icon is the machine's roller status symbol. In this case it is red and crossed out, meaning that the machine currently cannot process a plate.
The following status displays are possible:

The CDI cannot engrave, probably due to an interruption (interlocks).

The CDI is idle (idling cycle).

The CDI is moving its drum.

The CDI is currently engraving.

Engraving was stopped by the stop button, interlock or limit switch.

The plate is finished – engraving was completed successfully.

The plate is finished – engraving was stopped by an error, the plate may be unusable!

The next icon shows that there are interlocks:

The connection to the motor control process was lost, the expose program can no longer determine the CDI status. If this status is active, engraving is not possible and you may have to reboot the computer or call maintenance.

(See also: Interlock chapter.)

On the top row of the right-hand side you can see the following display window:

The value displayed on the left shows the vacuum. Here you see the current pressure in the drum. A pressure of approximately 700 to 800 mBar is necessary to hold the plate. If the pressure falls below this value, an interlock is triggered.

A pressure of 0.0 mBar (this is the atmospheric pressure) means that there is no vacuum at all. At 0.0 mBar the display turns red, indicating that there is no vacuum.

3-3 Interlocks

An interlock is a signal produced by the CDI hardware. It usually indicates that a particular machine status has occurred, at which engraving is not possible or cannot be continued.

Note: Some interlocks become effective during engraving only, others at any time.

- **Cooling**: appears when the external cooler is switched off or is not working properly.
- **Compressed air**: operation is stopped if the air supply is too low.
- **Exhaust**: operation is stopped if the exhaust unit indicates that the filter is closed or switched off.
- **Machine Cover**: the cover is not closed or locked in.
- **Vacuum**: no valid vacuum pressure (error lights up or Start flashes).
- **Motor**: An error has occurred in the stepping motor's drive.
- **Laser:** the laser is switched off or is not working properly.

When an interlock signal is received, a flashing warning sign appears in the engraving window's status display.
Clicking on this sign opens a new window showing the corresponding interlocks:

In this example, there is only one current interlock: "Machine Cover".

If you right-click on this interlock (in this example the word "Machine Cover"), a window opens with instructions on how to eliminate this error.

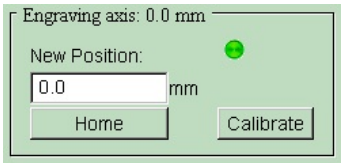
The flashing warning sign is displayed until you have eliminated the cause of the error and then clicked on the roller icon.

Note: If there is an interlock and you click on the roller status icon, the interlocks are checked again.

When there are no more interlocks, the roller icon shows the status "Idle" or "Busy".

The menu entry "Options" -> "Interlock Display" allows you to show or hide the interlock display permanently.

3-4 Sub-window "Engraving axis"



This sub-window is used to enter and display the engraver's position (top, left). When you enter a value into the field, the machine moves the engraving head to this position. If you want to cancel this movement, simply click on the Stop button in the submenu "Machine control" or press the ESC-key on your keyboard.

The text field shows the new desired position and the window's title bar shows the actual current position.

A green signal lamp is displayed on the top right. This green indicator lights up when the machine is calibrated, and does not show up if it is not calibrated in the advance direction (x).

You can perform a calibration by clicking on the"Calibrate" button on the right-hand side of this window. When you click on this button, the engraving head moves to the left-

hand side and calibrates with its 0-Position limit switch.

Note: Should the machine not be calibrated, perform a calibration before beginning engraving!

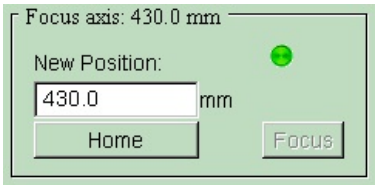
Caution: Verify that the path for the engraving head is free before it is moved!

On the bottom on the left is a "Home" button. Clicking on this moves the head to the 0.0 mm position.

HINT: You can move the engraving head by a certain amount relative to the current position by specifying the difference to the new position:

Example: The head is at position 200. You would like to move it 10 mm to the right. To do this, simply enter "+10" into the text field. Use a negative value to move the head to the left, e.g. "-10".

3-5 Sub-window "Focus axis"



This window shows the focus unit's current position.
If you enter a new position, the focus unit moves closer or farther away from the drum.

The text field shows the new desired position and the window's title bar shows the actual current position.

A green signal lamp shows whether the focus carriage is calibrated.

Clicking on the "Home" button moves the focus unit as far away from the drum as possible.

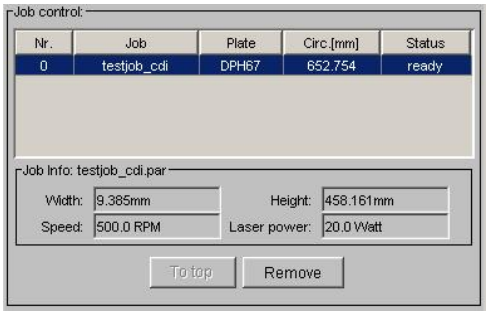
The "Focus" button is only active after an engraving has been completed. When it is clicked, it moves the focus unit to the last position at which the machine carried out an engraving.

Note: The focus axis is calibrated when the server is started.

Note: This window is always blocked in Grapholas 5.0, as no values need to be entered during normal operation. It is only released in service mode.

3-6 Sub-window "Job control"

This window displays the job queue. It lists all the jobs that are sent to the server from the Merge program.



This list contains all loaded jobs. In this example there is only one job, named "testjob_cdi". The list also displays information on the job, in this case: Plate type, job circumference and current job status.

The status may show any of the following values:

- "Wait" means that the job is waiting to be loaded into the job queue.
  - "Loading" means that the job is currently being loaded into the job queue.
  - "Ready" means that the job has been loaded and is ready for engraving.
  - "Done" means that the job has been completed.

Note: If a job has the status "Done", it blocks the server, so that no new jobs can be loaded. New jobs then receive the status "Wait".

To delete a job, simply select it and click the "Remove" button.

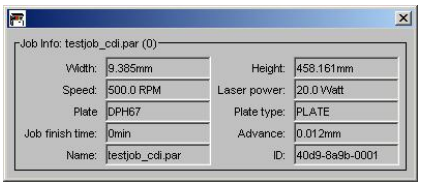
Clicking on the "To top" button moves the selected job to the top of the list.
A number, such as (0), provides the job's position in the queue.
Of course, the first job in the list is the first one to be engraved.

Note: A job cannot be removed or repositioned during engraving.

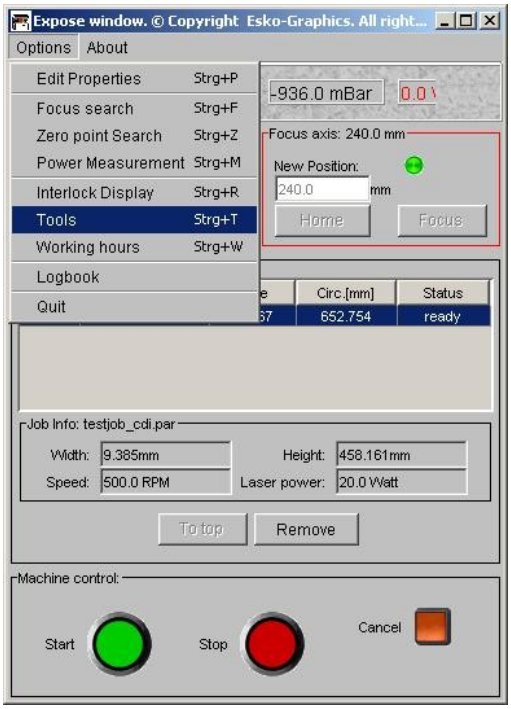
The two rows below the job queue list contain further information on the selected job:

- Job width (advance direction) - Job height (circumference direction)- The selected speed at which the job is engraved- The laser power used to engrave this job.

Note: The circumference should always match the circumference for which the job was gridded.
Right-click on a row to obtain further information on the selected job. A new window opens up:



3-7 Tools in the menu bar

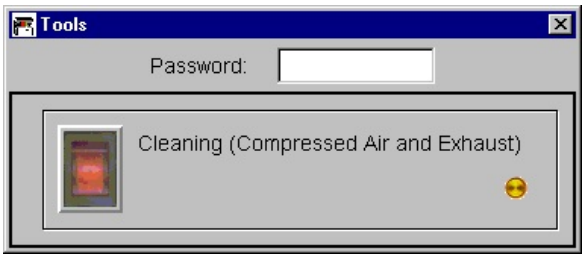


This menu contains 8 options:

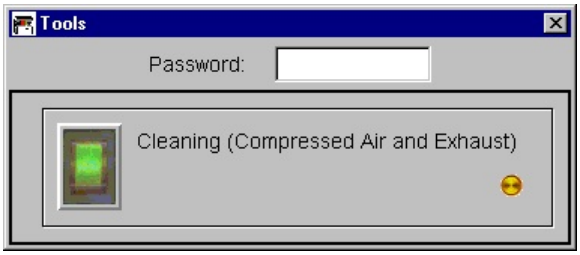
- Edit Properties
- Focus search
- Zero point Search
- Power measurement
- Interlock Display
- Tools
- Working hours
- Logbook
- Quit

3-7-1 Dialog box "Tools"

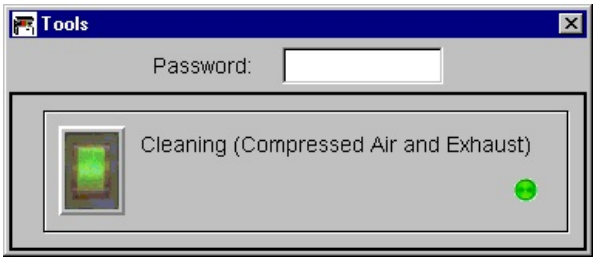
If you select this option, the following window appears:



Clicking on this button switches on the exhaust and the compressed air:



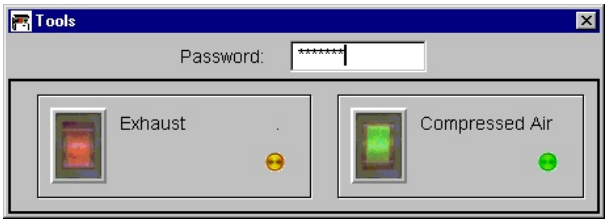
After the corresponding interlocks have finished, the signal lamp changes from orange to green to show that both units are operational:



Maintenance technicians may need to enter a password in order to obtain extended access.

This is the known administrator password for all Grapholas® machines.

After entering the password the dialog box looks like this:



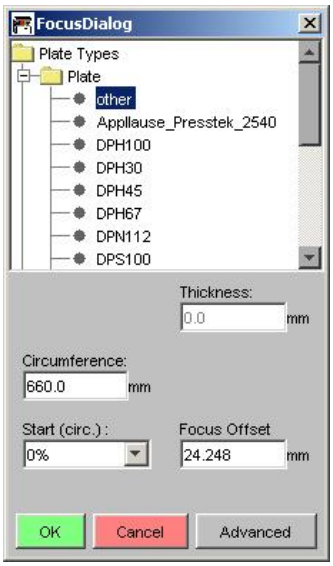
The only difference is that the two functions are shown separately, so that the maintenance technician may test the units individually.

3-7-2 Window "Focus Search"

The focus search is used to determine the exact position at which the laser spot on the plate is the most focused.
For this, several tracks, which are set in the field "Number of tracks", are engraved using different focus unit positions.

After the CDI has engraved these tracks you will be prompted to determine, which of these tracks is the most focused.

So if you select "Focus Search" in the "Options" menu, the following window appears:



Several focus search parameters are provided:

"Plate type": here you select the correct plate type to be used for the focus search. If you select the type "Other", the Thickness field is activated and you can enter any desired value.

Note: It is extremely important to select the proper plate type, as otherwise incorrect focus positions occur on other plates.

The field "Circumference" must contain the same value that is used for circumference in the Merge program.

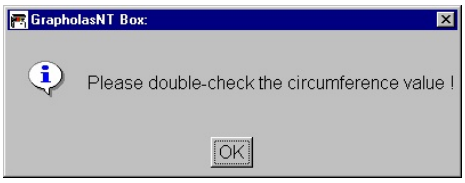
As "Focus Offset" you can enter an initial value for the best focus position. If you do not enter a value here, it will be set during the focus search.

"Start" lets you determine in 10%-steps, where on the circumference the focus search is performed.

If you select the option "Advanced", you can fine-tune the focus search even further. This should only be necessary in exceptional cases. The advanced options for the focus search are explained in the next chapter.

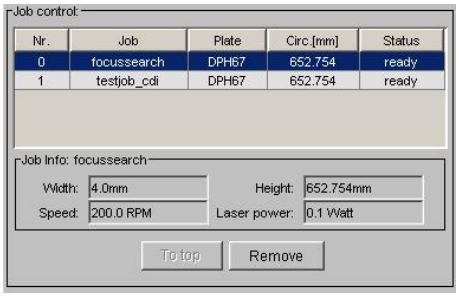
Click on "OK" to save these values and send them to the job queue. Click on "Cancel" to cancel the operation.

As soon as you click on "OK", a warning message appears:

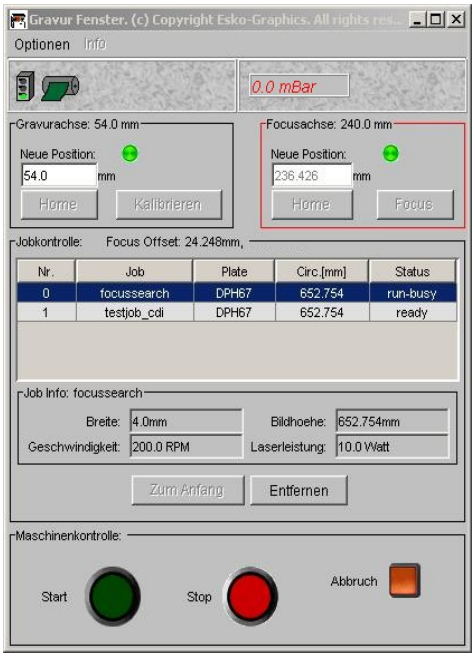


The sole purpose of this message is to verify that the user has set the correct circumference.

When the job is sent to the job queue, it automatically places itself at the top of the queue. You can then click on "Start" in the Machine Control sub-window.



After the focus search has been completed and the drum is no longer turning, the "Exposer" looks like this:



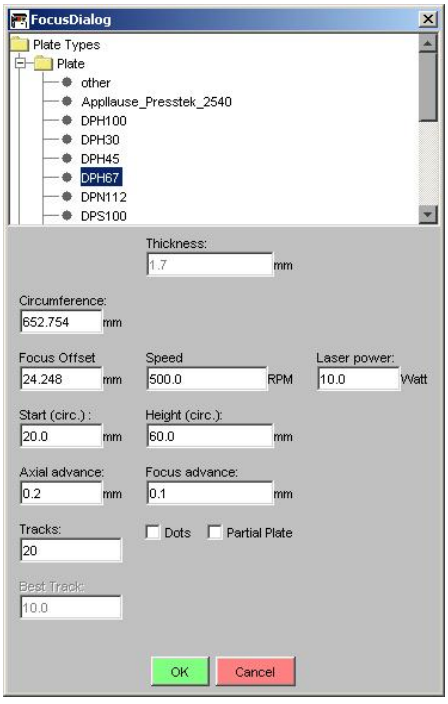
A new window appears:

Here you can enter the number for the best track. The tracks are counted from left to right. Thus, the track on the far left has the number 1, the track on the right has the number 20.

Note: The best focus is reached when the middle track looks the best. In this example this must be track 10.

3-7-2-1 Advanced focus search

The advanced focus search offers further setting options:



"Speed": the revolutions per minute used for the focus search.

Note: Speed and Axial Advance are linked via the motor's maximum interval frequency. If you exceed this frequency, either the speed or the axial advance is reset to a safe value.

"Laser power": the power used by the CDI for the focus search. If this is set too low, you will hardly be able to see the tracks on the plate. If it set too high, you can hardly tell, which track is the most focused.

"Start" and "Height" in circumference direction: Here you can set a window around the drum in which the focus search is performed. To do this, define a starting position and a height to determine the length of the focus search.

"Axial Advance": the distance between the tracks. If this distance is too low, it may be difficult to tell, which track is the best.

"Focus Advance": here you set the focus unit's advance for each track.

Note: If you are far outside of the focus, you can use 0.2 mm, for example, to scan a large focus position range. If you are close to the best focus position, you can use 0.05 mm to scan a small focus range and detect the best focus setting.

"Dots": if this box is not checked, a line will be engraved to form the tracks. If the box is checked, a dotted line will be engraved to form the tracks.

"Plate type": in this drop-down list you can select the correct plate type to be used for the focus search.

Note: It is extremely important to select the proper plate type, as otherwise incorrect focus positions occur on other plates.

When you select a plate, its thickness appears in the field "Thickness". You can overwrite this value, but it is not recommended.

In the next field, "Tracks" you can determine the number of tracks used for the focus search.

Note: If you enter a large value, a larger focus range will be scanned, but you will also be wasting more room on the plate.

3-7-3 Zero point search

This option is only available for machines with the "Sleeve Option". Its purpose is to determine the exact zero point on the engraving sleeve.

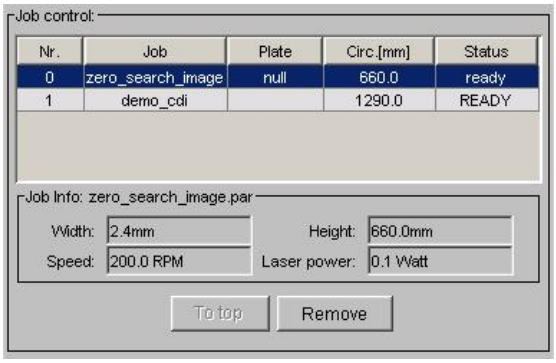
If you select this option, the following window opens.

It is very important to enter the correct sleeve circumference here. There is the possibility of selecting a predefined sleeve from the list. If the currently inserted sleeve is not on the list, you must manually enter the circumference in the circumference field.

As the zero point search is performed by engraving a small test engraving, you must also specify laser power and speed.

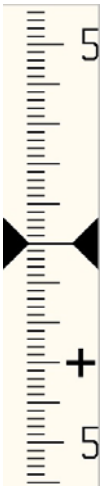
The text field "Offset" is used to specify the value by which the engraved image is to be moved around the circumference, so that the seam lies exactly on the zero point.

After clicking on "OK" the new job appears in the job control window as follows:



If the engraving is now started, a 2.5 mm wide strip is engraved on the engraving sleeve.

This strip contains the following scale:



The exact zero point is where the two triangles point at each other.

The scale comprises +- 40 mm at a resolution of 1/10 mm.

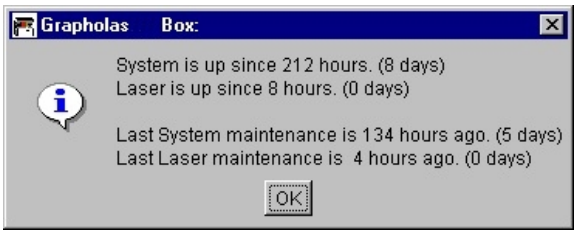
After the first zero point search, you can now measure how much the engraved image must be moved with the "Offset", so that it fits onto the engraving sleeve.

It is recommended to perform a second zero point search in order to verify that the measured value is correct. To do this, enter the new "Offset" value into the "Offset" text field when performing the second zero point search.

Note: the value specified for the "Offset" is only valid for the immediately next engraving. After this engraving has been completed or cancelled it is set back to 0.0!

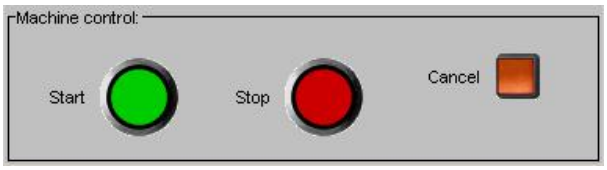
3-7-4 Working hours

This displays a window with some of the machine's operating data:


Grapholas Box:
System is up since 212 hours. (8 days)
Laser is up since 8 hours. (0 days)
Last System maintenance is 134 hours ago. (5 days)
Last Laser maintenance is 4 hours ago. (0 days)
OK

The display of laser usage hours is only correct for lasers supporting the identification of operating hours.

3-8 Window "Machine control"



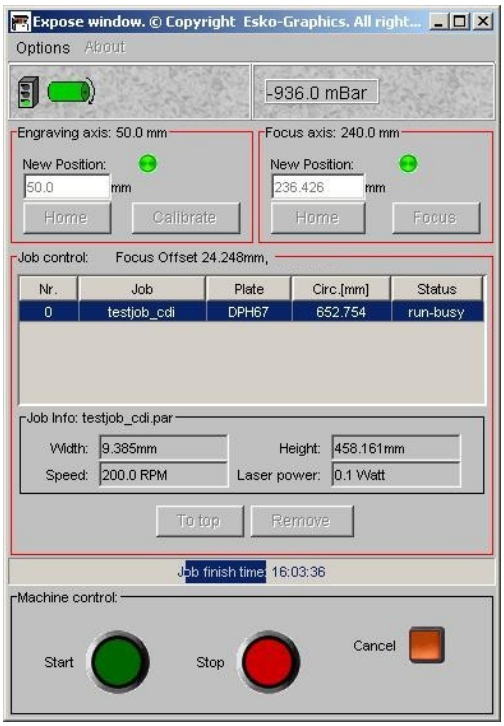
This sub-window only contains 3 buttons.

Note: Deactivated buttons are shown darker.

If there is no active interlock and there is a job in the queue, the "Start" button is activated and can be used to start engraving.
If an engraving process was stopped using the "Stop" button, you can click on "Start" to restart it.

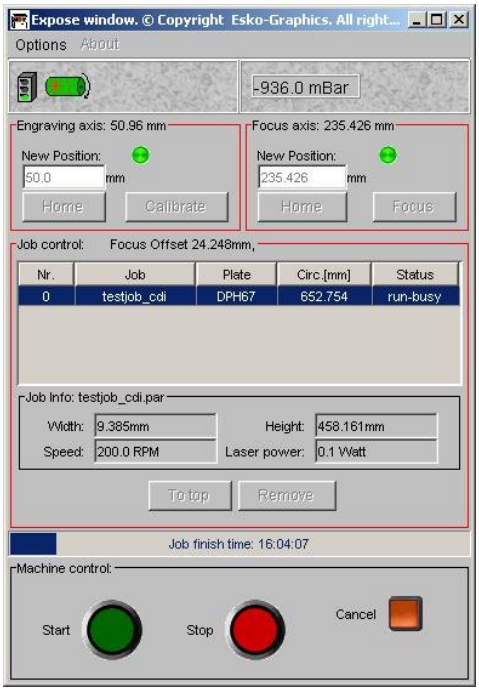
Caution: Verify that the engraving head is at a correct position so that it engraves on a free part of the plate.

After you have clicked on "Start", the Exposer looks like this:



All areas except for the machine control are deactivated. The status symbol shows that the drum is beginning to turn. Note, that the "Start" button is now deactivated! The progress bar now shows that the end of the engraving has not yet been determined, as the machine has not yet completed the starting process.

Shortly afterwards, as soon as the drum has reached its full speed, the Exposer looks like this:

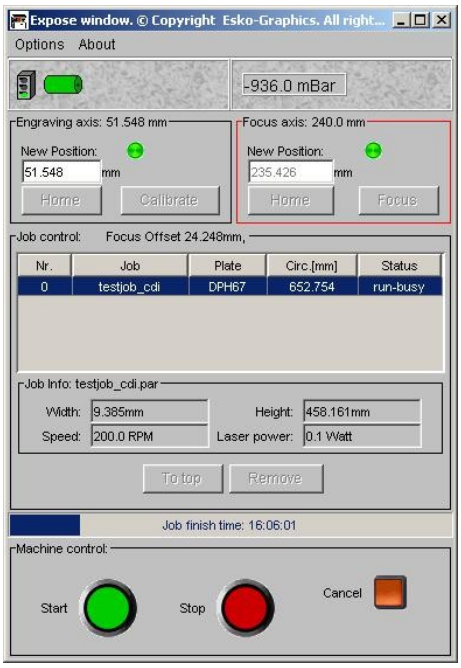


Now the laser is switched on and the machine is performing the plate exposure. The progress bar shows how long it will take for the engraving to end.

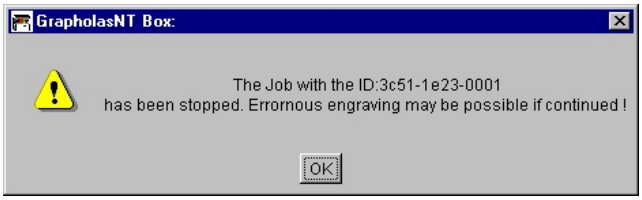
You can stop the machine by clicking on the "Stop" button. This usually stops the job that is currently being engraved.
You can, however, also use it to stop the positioning of the engraving axes. Instead of clicking on "Stop", you could also press the Esc key on your keyboard.

Caution: The Esc key only works if the engraving window is the activated window!

The machine is stopped and the progress window is refreshed to display the area already engraved:



You can now click on "Start" to continue the job. First, a warning message appears:



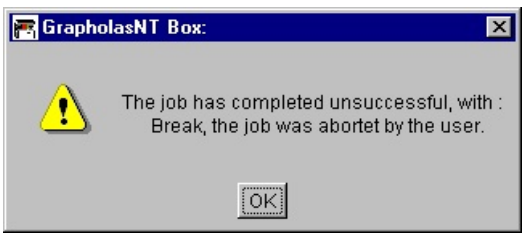
If you confirm this message, the job is continued.

Practice has shown that plates that are stopped and continued once or several times do not contain errors. However, this cannot be guaranteed. Therefore the warning message.

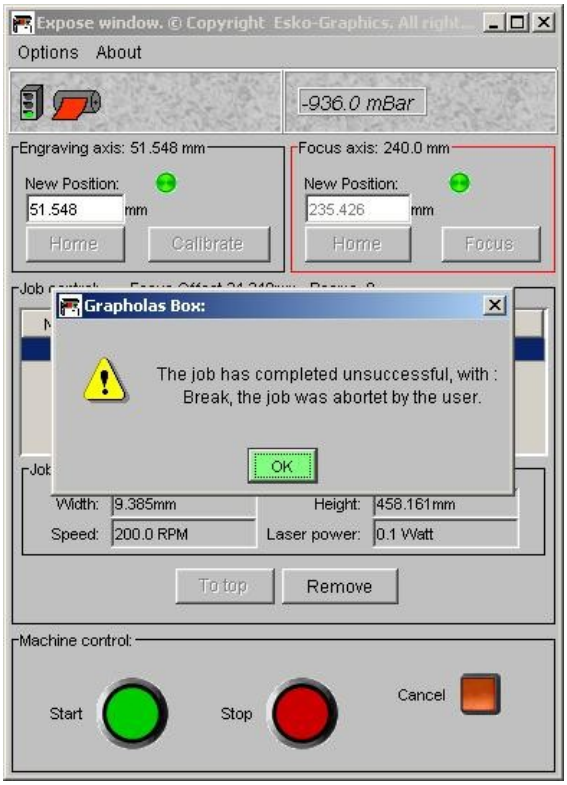
The "Cancel" button can be used to abort the engraving of a job that is currently running or has been stopped.

Note: An aborted job can not be continued!

If you abort a job, the following error message appears:

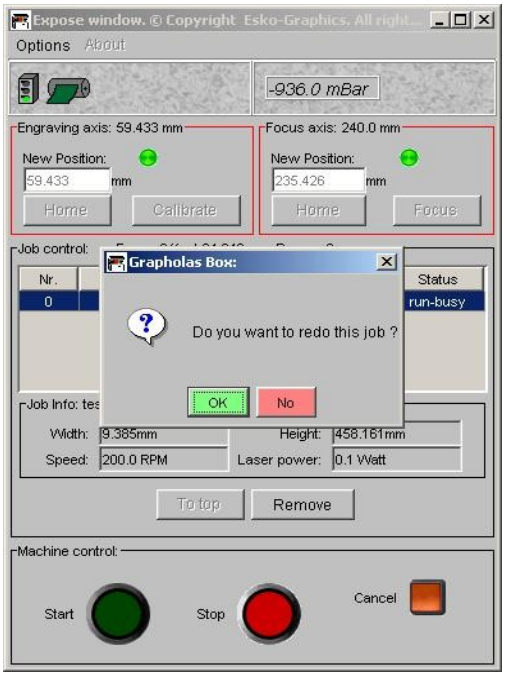


After you have clicked on "OK" the Engraving window looks like this:



The status display now shows an error symbol, and in the sub-window "job control" the job status "Ready" appears.

If you do not abort engraving and it is completed successfully, the Engraving window looks like this:

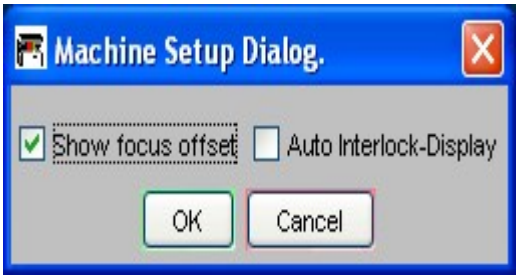


In any case you must decide, if you want to engrave the job again or remove it. Selecting "OK" places the job at the end of the queue, "No" removes it from the queue.

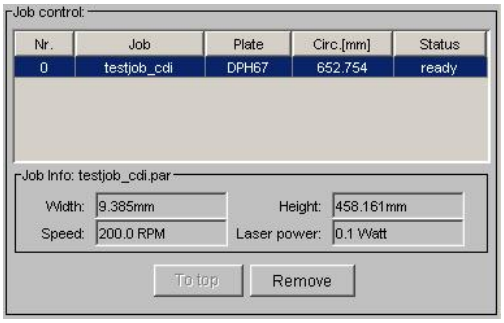
Note: On this point you must select either "OK" or "No". As long as you have not made a selection, the Exposer keeps waiting for your decision and blocks other jobs from loading.

3-9 Edit Properties

Only 2 properties can be edited in the Exposer:



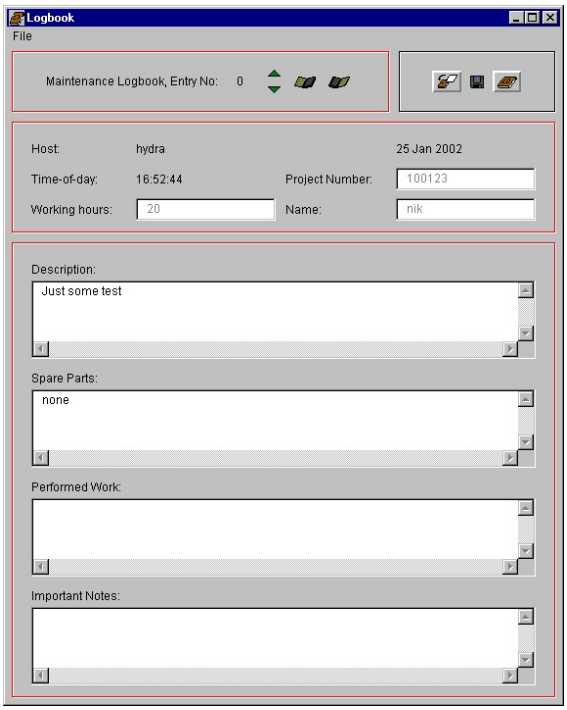
The first modifiable property is "Show focus offset". This activates / deactivates the focus offset display. The next illustration shows the job control with deactivated "Focus offset":



The last option is "Automatic Interlock-Display". If this option is activated, the window with the interlock display opens automatically. If not, the user must open this display by clicking on the interlock lamp, should an interlock occur.

3-10 Logbook

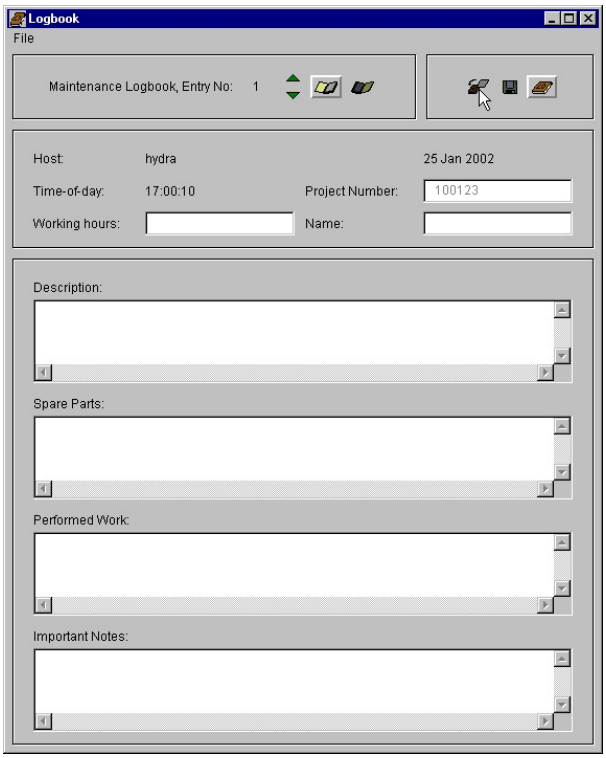
If you select the option "Logbook" in the "Options" menu, a new window is opened:



This program is used by maintenance technicians to record all machine-related processes that are performed during the machine's lifetime. The above illustration shows the last entry by "Nik". There is nothing interesting to see here; no entries were made.

Click on the "New Page" button:

A new empty page is created, in which you may enter any desired information:



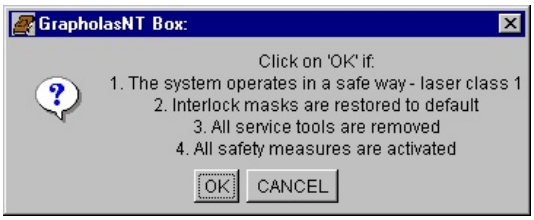
First, enter the CDI's working hours and your name.

You can now add further information in the individual fields:

- Description (e.g. of an error)
- Spare Parts
- Performed Work
- Important Notes

Save this page by clicking on the "Save" button:

A new window is displayed, in which the maintenance technician must confirm that the system is working flawlessly again:


GrapholasNT Box:
Click on 'OK' if:
1. The system operates in a safe way - laser class 1
2. Interlock masks are restored to default
3. All service tools are removed
4. All safety measures are activated
OK
CANCEL

After this confirmation the page is added to the logbook and can no longer be modified or deleted.

Use the following keys to browse the logbook:

To previous page:

To next page:

To first page:

To last page:

Note: For each year a logbook file is created. These files are stored in the folder c:\users\flex and have names such as ".maintenance.2001".

CHAPTER 4 - The "ScreenView" program

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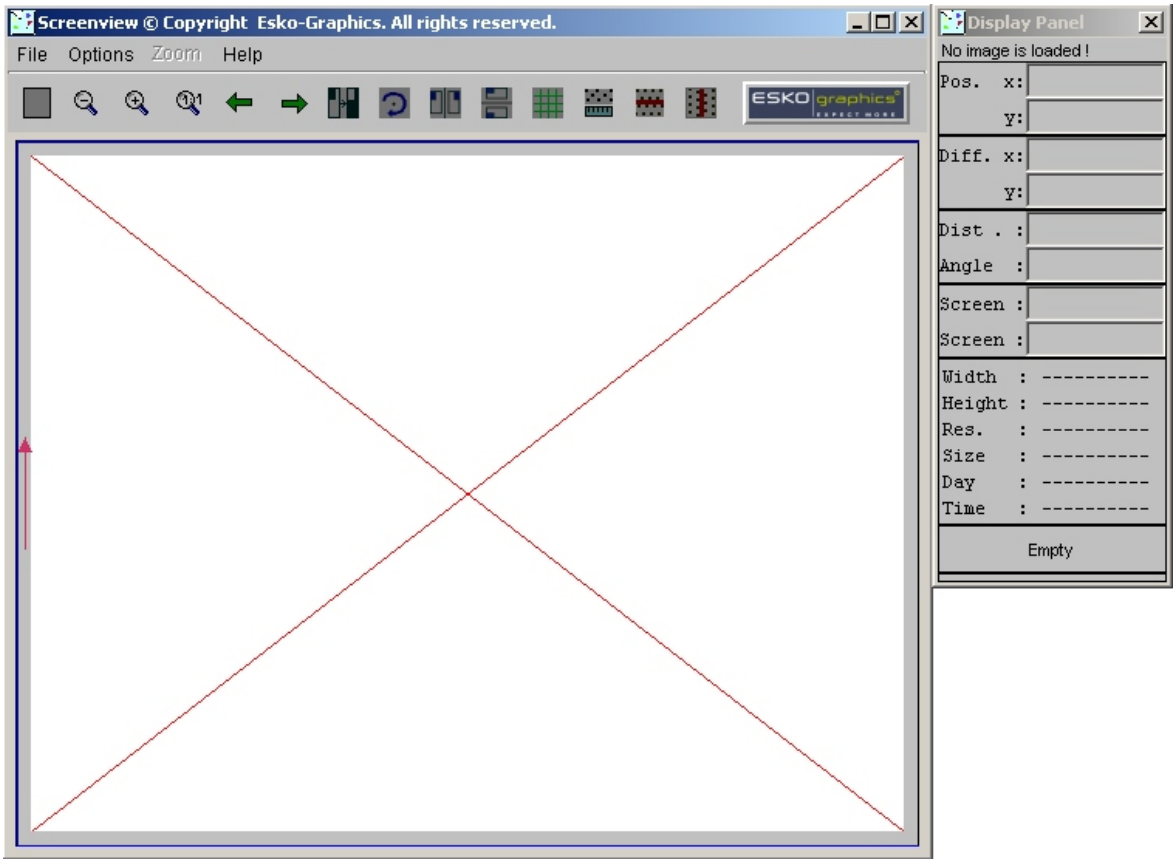
4-1 Purpose

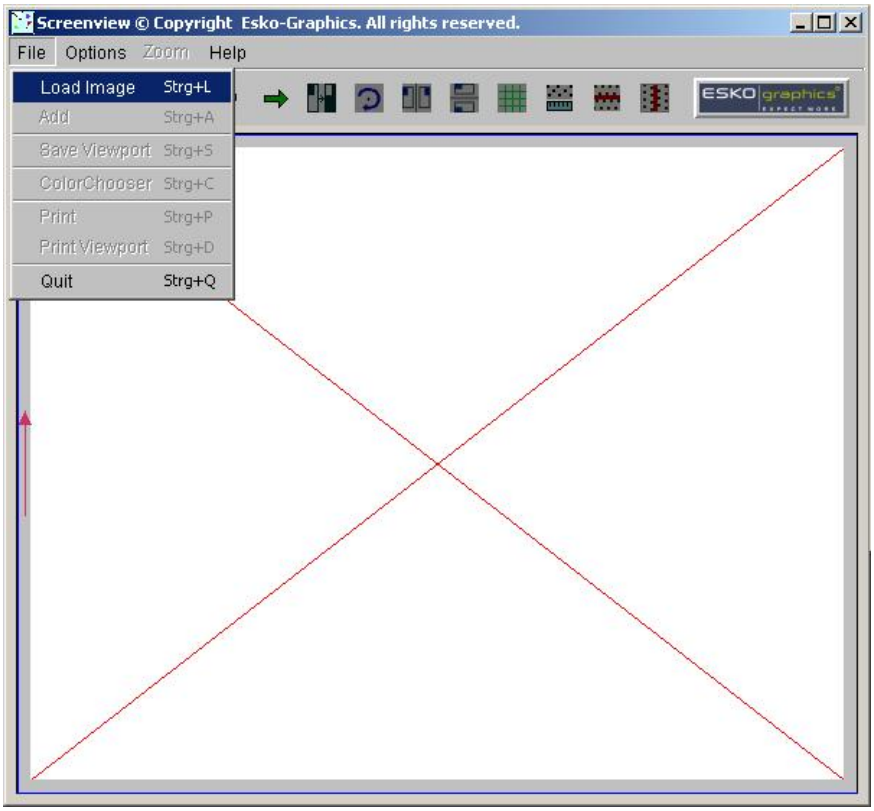
The "Screen View" program is used to view the job files in the .len-format. The .len-format is the format used to exchange data between the FastRip/C or FlexRip and the CDI.

4-2 Loading an image

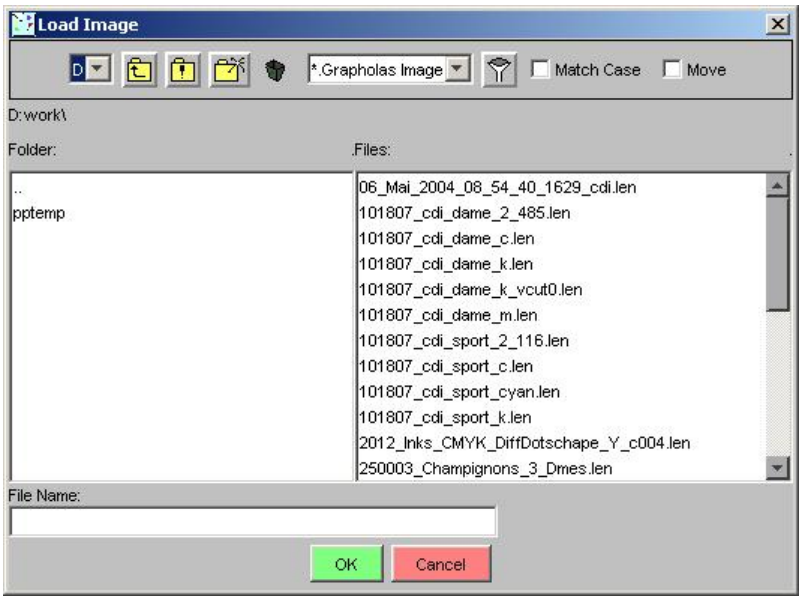
Double-click on the "View" icon on your desktop or on the left-hand side of the "Merge" program to load a job.
In the latter case, the selected images is loaded into the "Screen View" program. You can then continue with the chapter "An image has been loaded".
If you double-click on the "View" icon on the desktop to start "Screen View", an empty "Screen View" window appears:



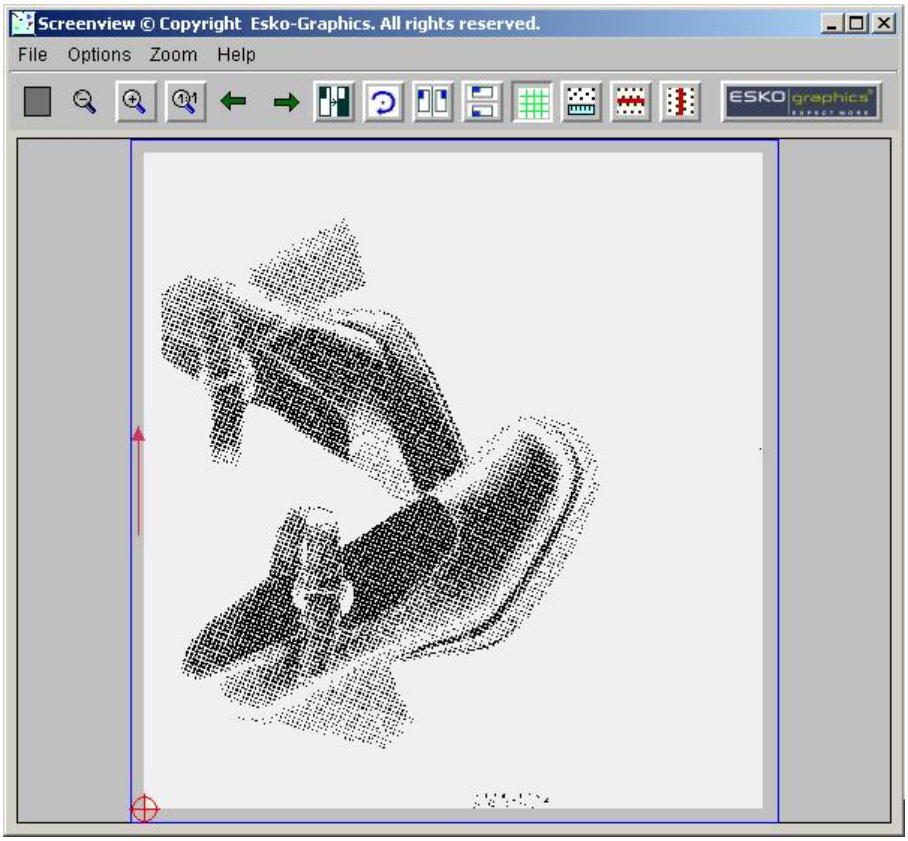
Now, select the image that is to be loaded. Do this by opening the "File" menu in the menu bar:



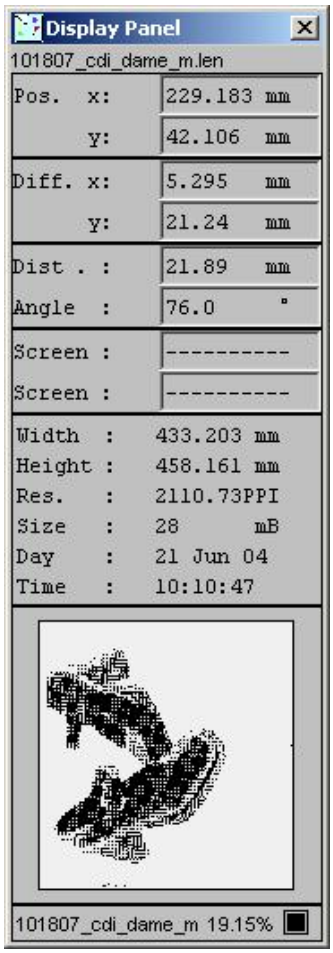
Select "Load Image". A file selection window opens:



In this file selection window you can select the directory containing the desired image and then select this image.
The image is loaded. Depending on the size of the .len-file, this may take a few seconds.
For Grapholas 5.0 and higher, the image type is displayed as "Grapholas Image". This refers to all image formats that Grapholas can process. In this case it means: images with the format .len and .tif.
Next, the image is displayed:



On the left-hand side below the menu bar there are zoom buttons allowing you to increase or reduce the image's viewing size. The name of the displayed files and the current mouse pointer position on the image (here in mm) appear in a separate window, the "Display Panel".



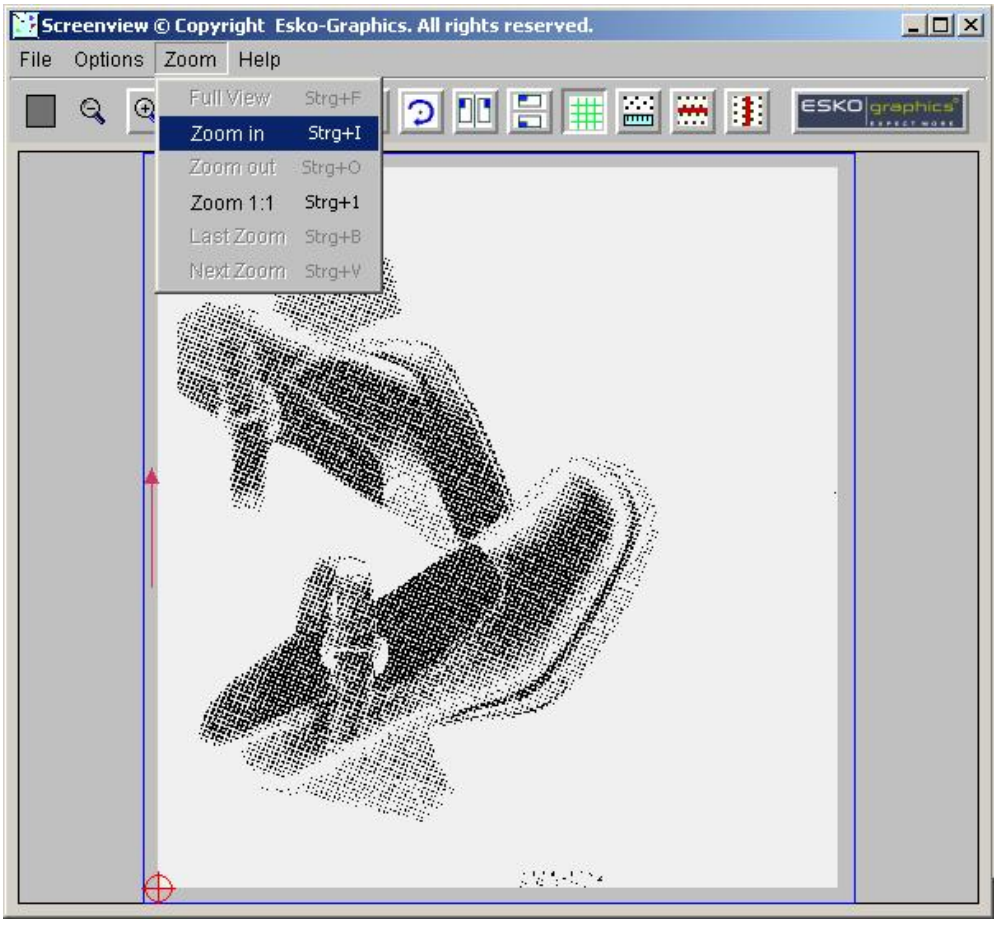
You will also find some information used to measure distances within the image. These features are explained later on. You are furthermore shown a miniature full view of the image.
The main part of the screen is used to display the image.

4-3 Zooming in / zooming out

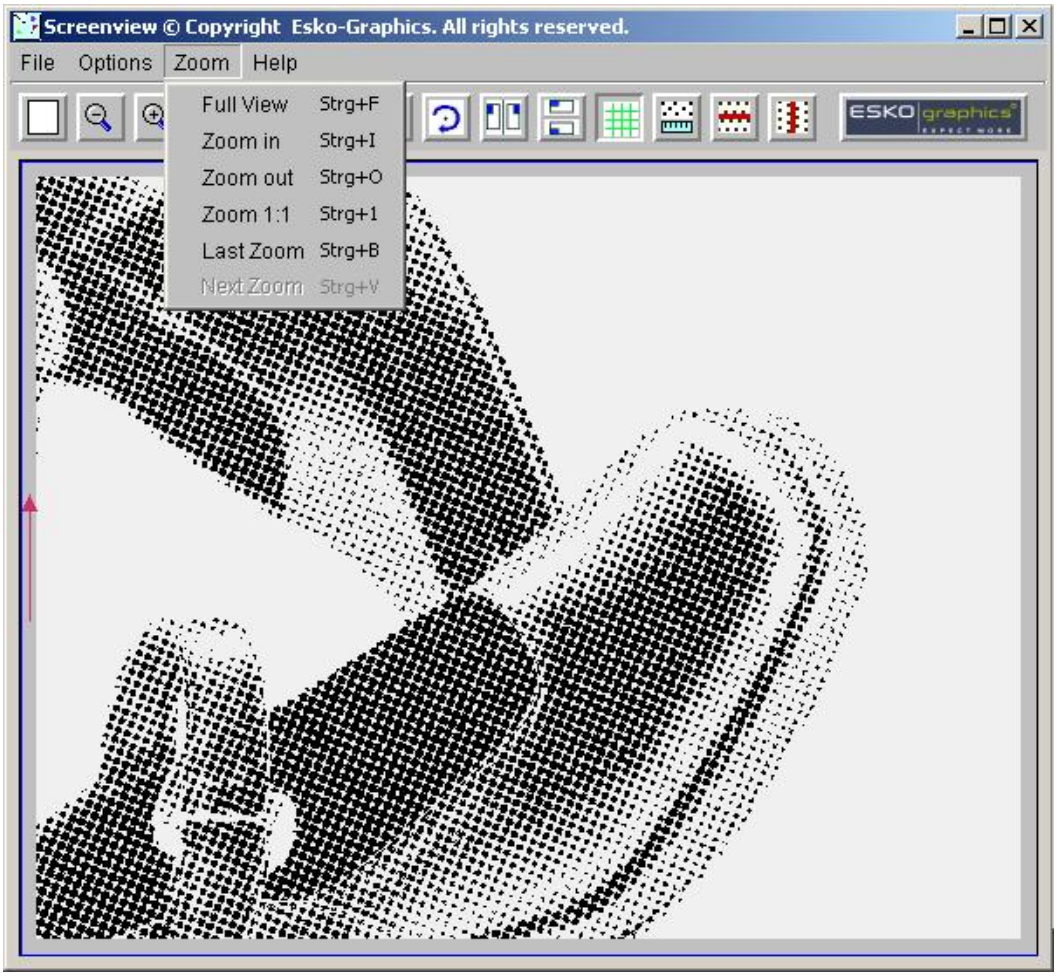
4-3-1 Zooming in

You can zoom in to see an image's details more clearly. To do this, select the menu option "Zoom in" or click on:

or select the desired image area with the mouse. The following illustration shows how you can zoom in using the menu option "Zoom in":

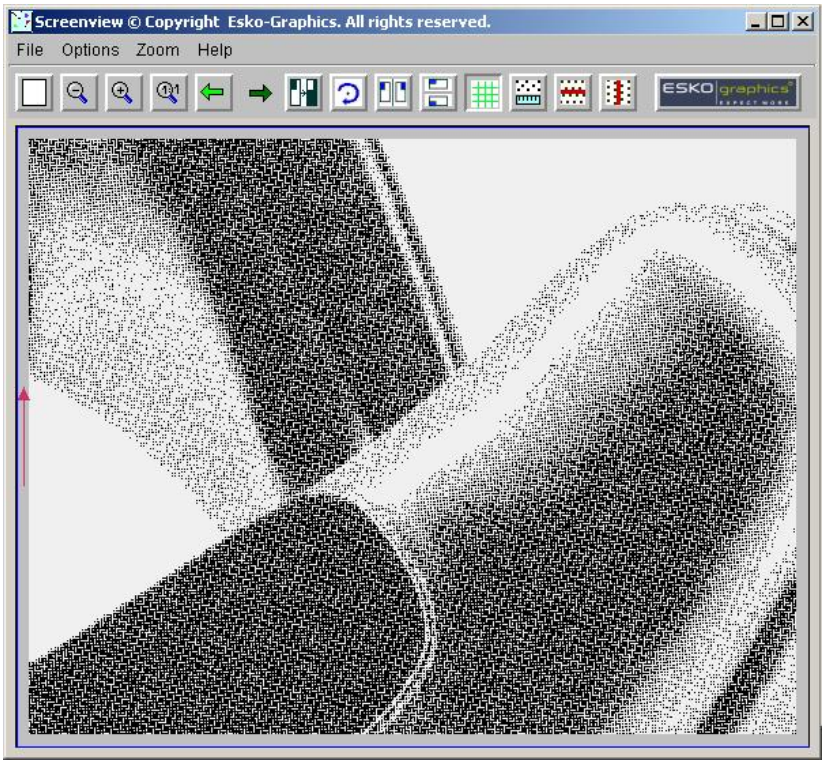


After you have zoomed in, several other features are available in the "Zoom" menu, as you can see in the next illustration:

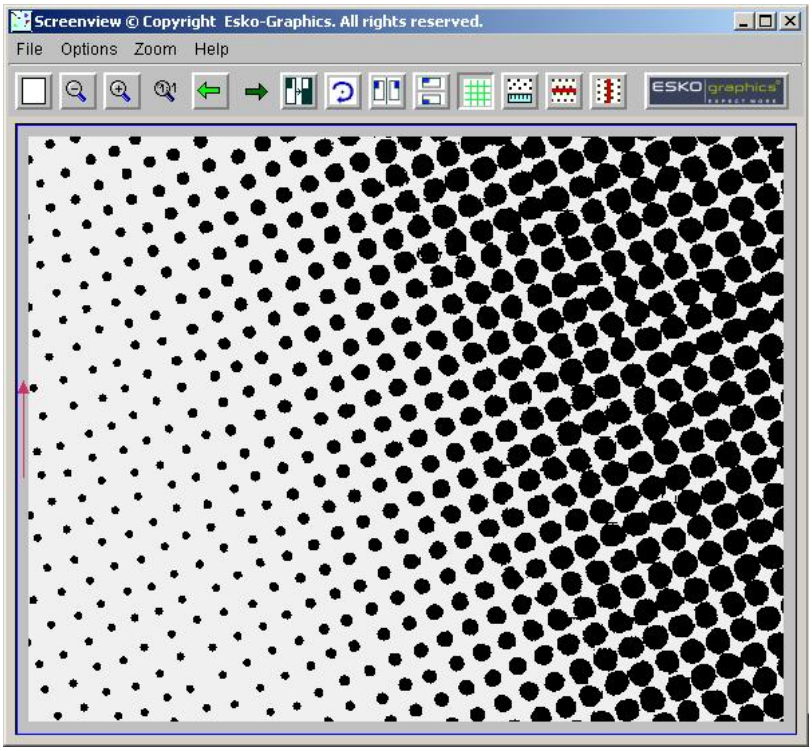


The following illustration shows how you can zoom in further using the key:

The result then looks like this:

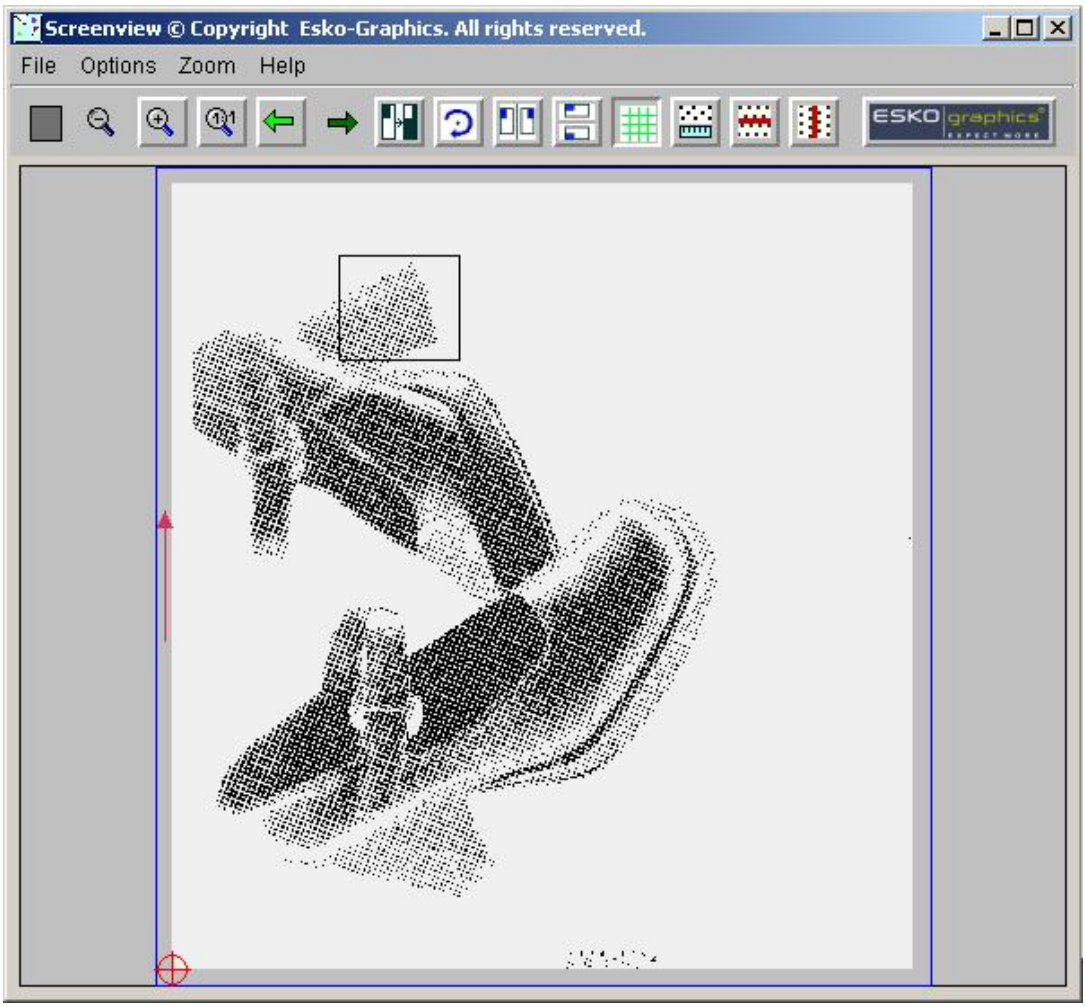


You may also zoom in to a level where you can see the image's individual pixels:



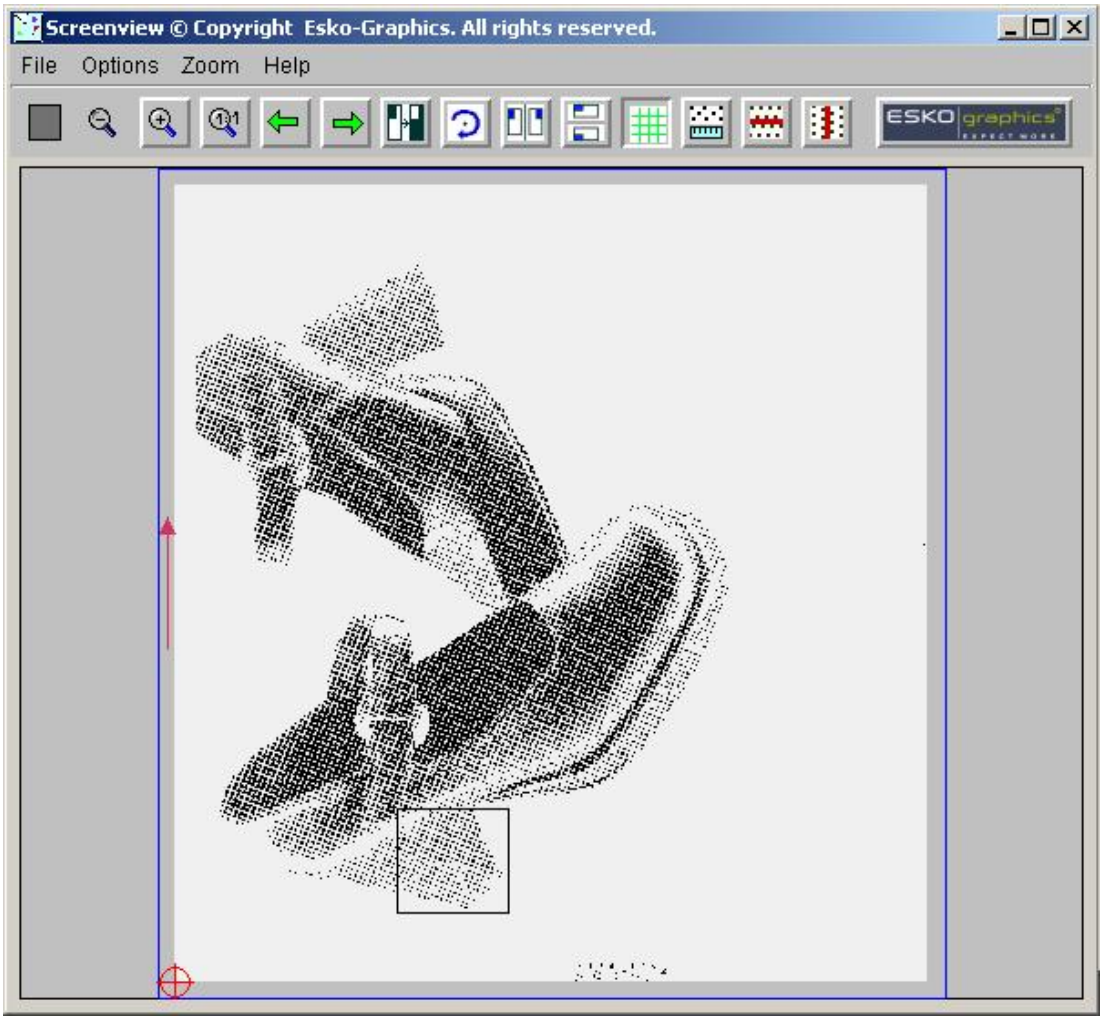
4-3-2 Zooming with the mouse

Draw a rectangle over the area of the image you would like to magnify with the mouse. First, set the mouse pointer to the top left corner of the desired area within the image. Then press the left mouse button and drag a frame around the desired image area with the mouse pointer, still pressing the left mouse button.

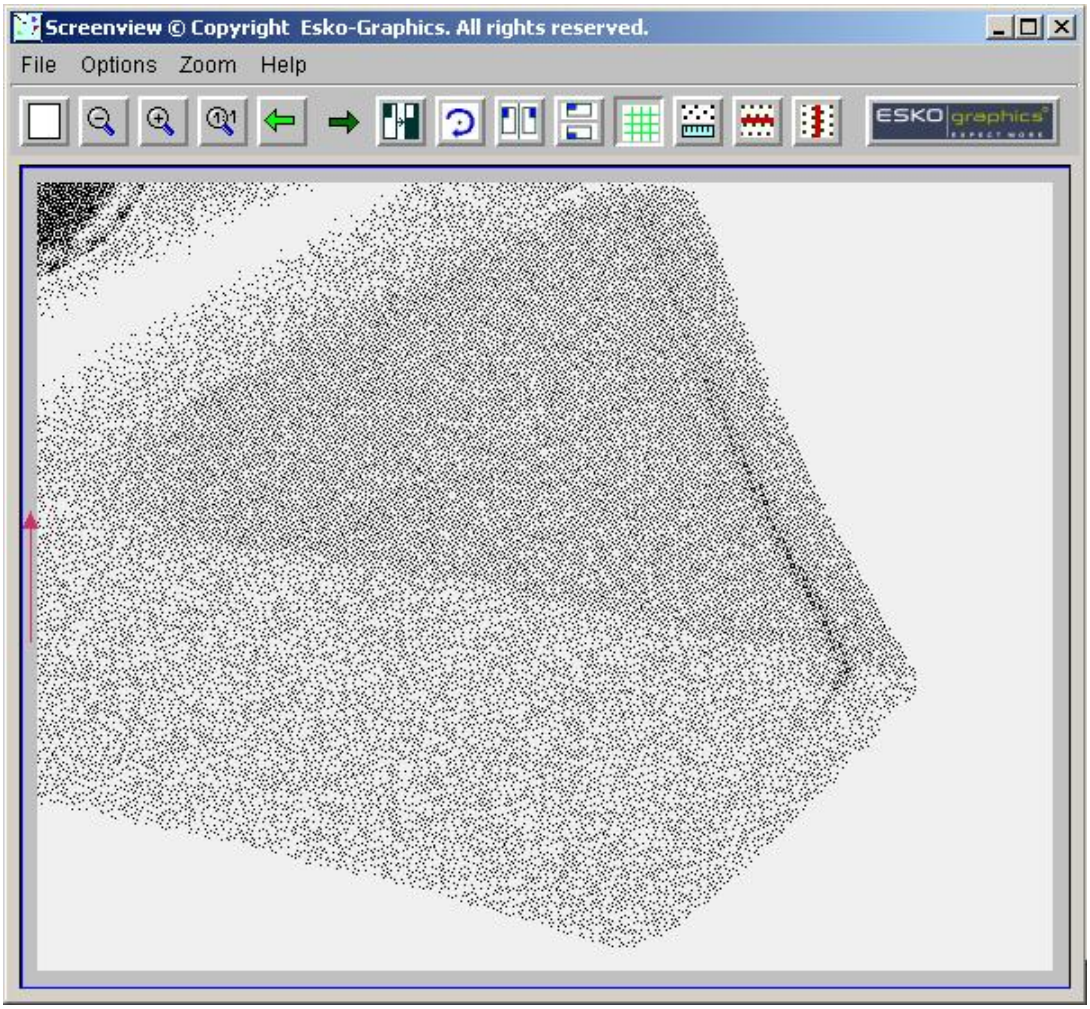


It may be possible that the frame now has the desired size, but is not yet on the right area of the image.

In this case you can press the right mouse button together with the left one and move the frame over the image:



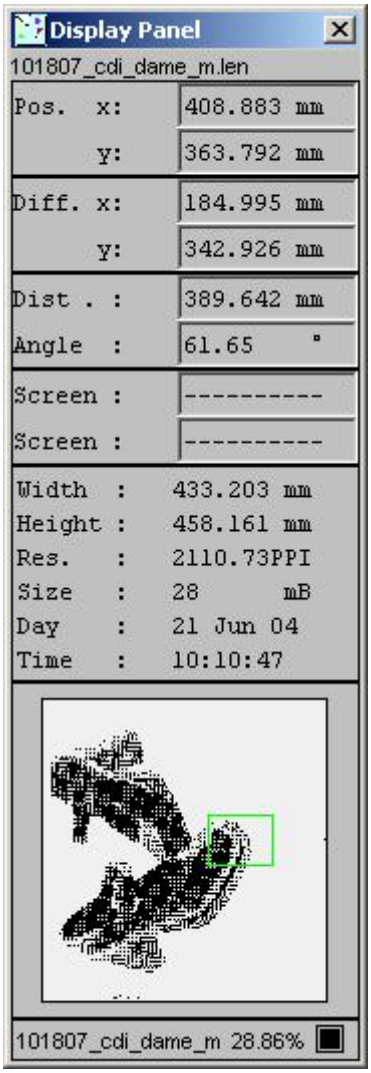
When you have reached the desired position, let go of the right mouse button.
To zoom in on the selected area, let go of the left mouse button, too:



The display now zooms in on the area selected with the mouse.
All zoom operation are also displayed on the "Display Panel" at the same time. This means that the frame symbolizing the displayed area of the image changes.
The zoom operation with the mouse described above may also be carried out on the "Display Panel" instead of the actual image.

4-3-3 Moving the selected image area

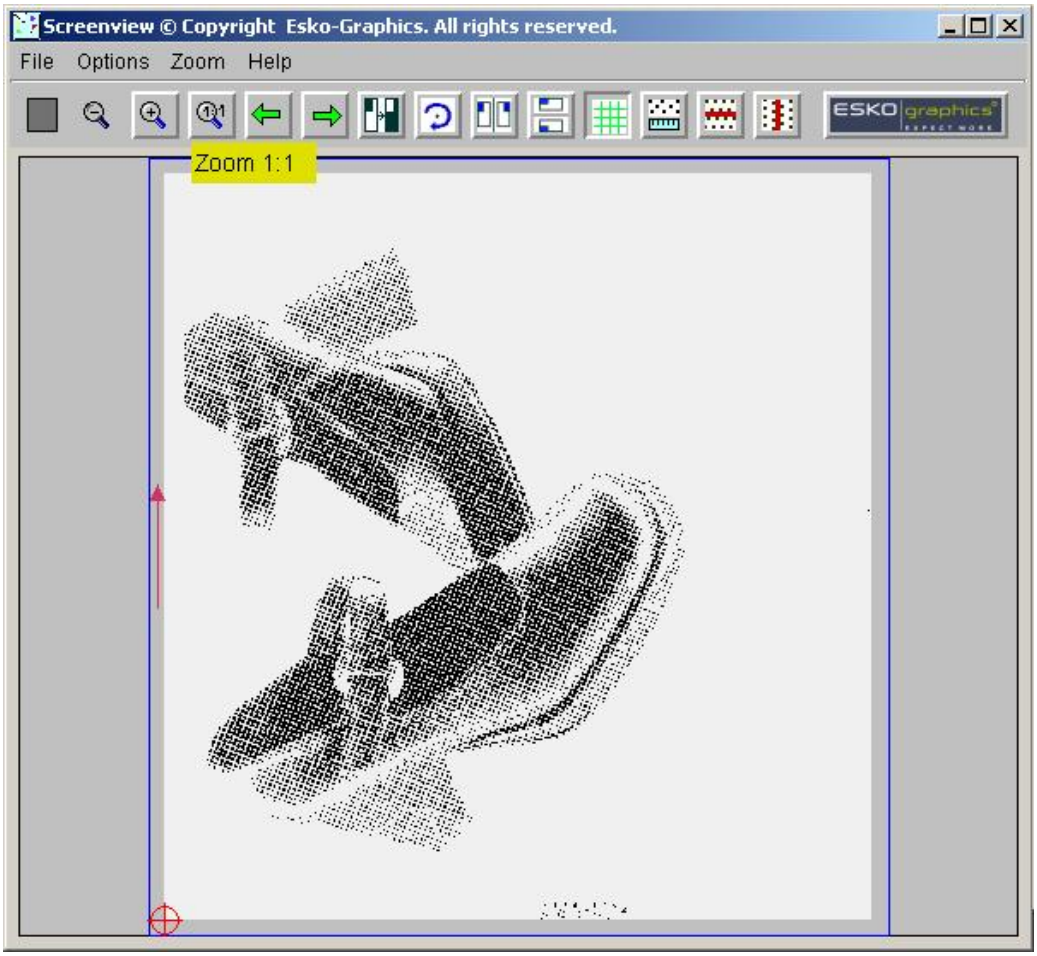
If you would like to move the selected area at this zoom level, move the mouse pointer to the side of the image where you would like to see more and right-click here:
It is even easier, if you simply click on the frame in the Display Panel and move the visible area there:



4-3-4 Zooming to scale

If you select this option (using the menu option "Zoom 1:1" or the button:), the image is set to scale so that 1 image pixel corresponds to exactly one pixel on the screen.

This may be useful, for example, to check the image for Moiré effects.



It may happen that there is not enough working memory to load the desired number of pixels into "Screen View" due to Windows memory administration restrictions.
Put differently: the selected image is too large to be displayed to scale.
In this case the following message appears:

If this occurs, simply go back to the previous zoom level, zoom in further and try again to zoom 1:1.

4-3-5 Zooming out

To zoom out, click on:

or select the menu option "Zoom out". This reduces the current zoom level by one step.

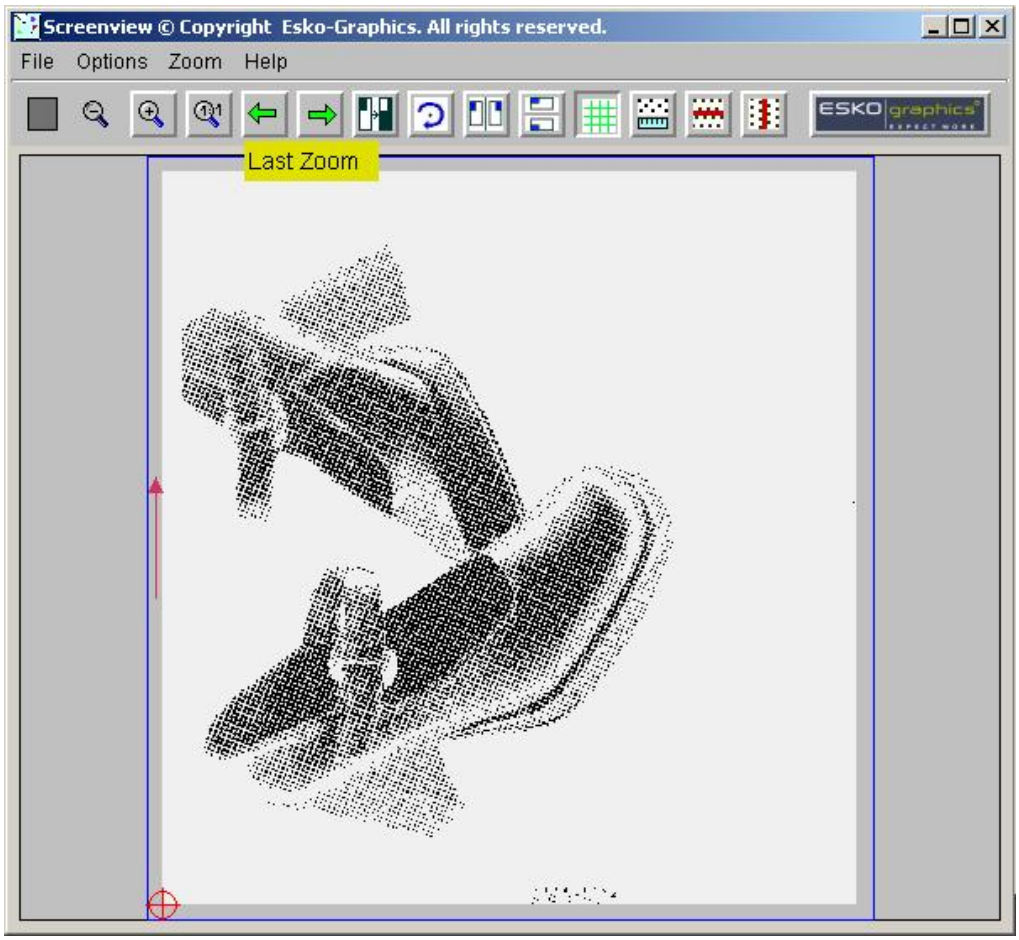
This next button corresponds to the menu option "Full View". This is used to go back to the entire image view:

Afterwards, the option "Full View" and "Zoom out" are deactivated.

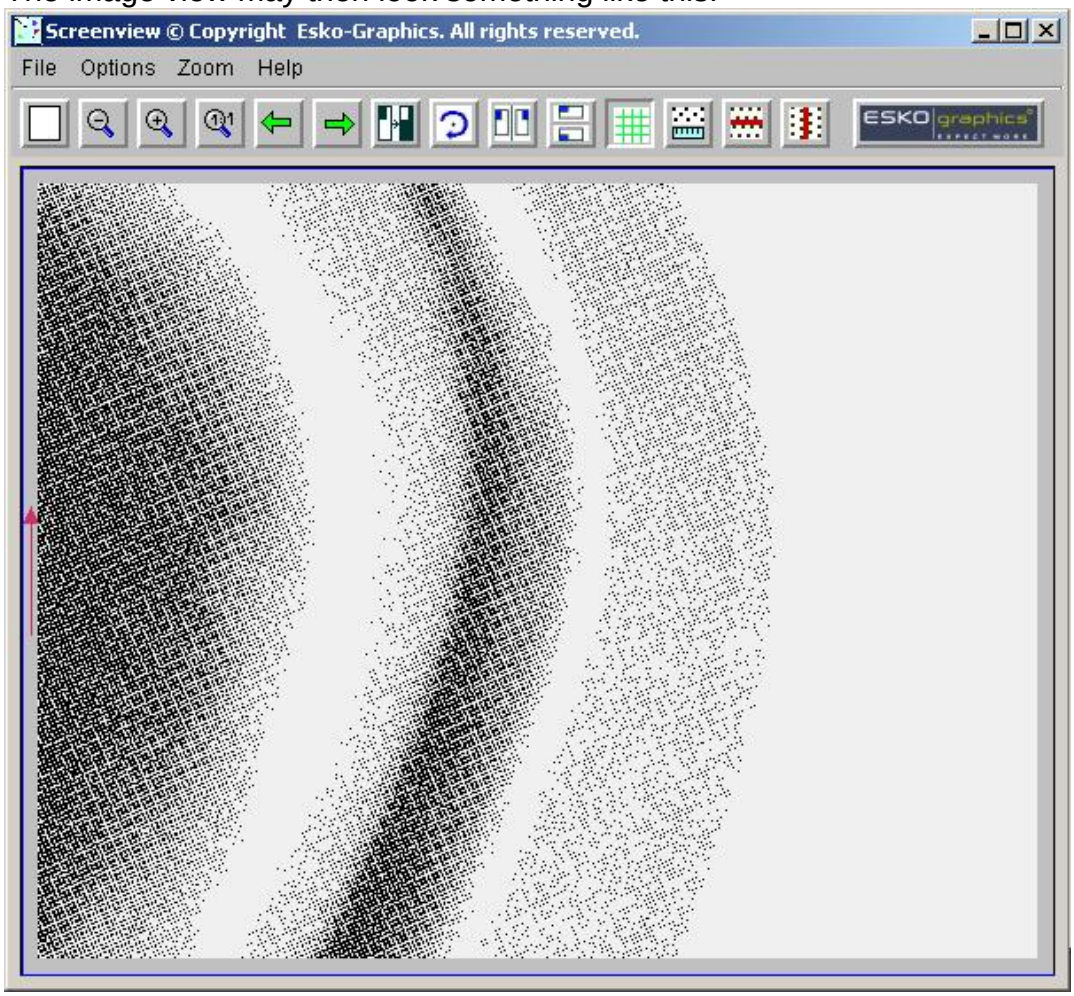
4-3-6 Selecting last and next zoom

The "Screen View" program saves the last 5 zoom levels, which can be accessed using "Last Zoom" and "Next Zoom".

This button corresponds to the menu option "Last Zoom" and loads the previously used zoom level:


Screenview © Copyright Esko-Graphics. All rights reserved.
File Options Zoom Help
Last Zoom

The image view may then look something like this:



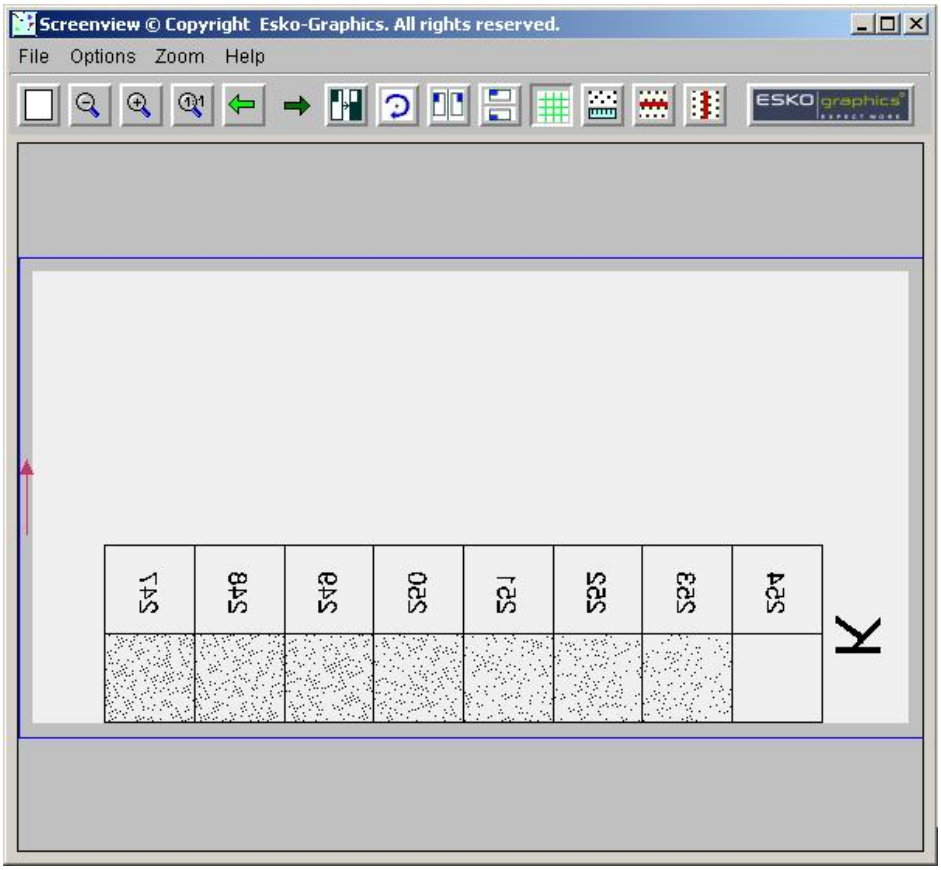
Having gone back a step, we now have the option to go forward a step again:
This button corresponds to the menu option "Next Zoom".

If you select this option, you move one step forward in the zoom history.

4-4 Image measurement

4-4-1 Measuring distances in an image

In order to measure a distance or an angle within an image, you must first set a marker. You can do this by pressing the Ctrl key on your keyboard and moving the mouse pointer to the position where the marker is to be inserted. Click with the left mouse button.
You now see a red cross on the image:

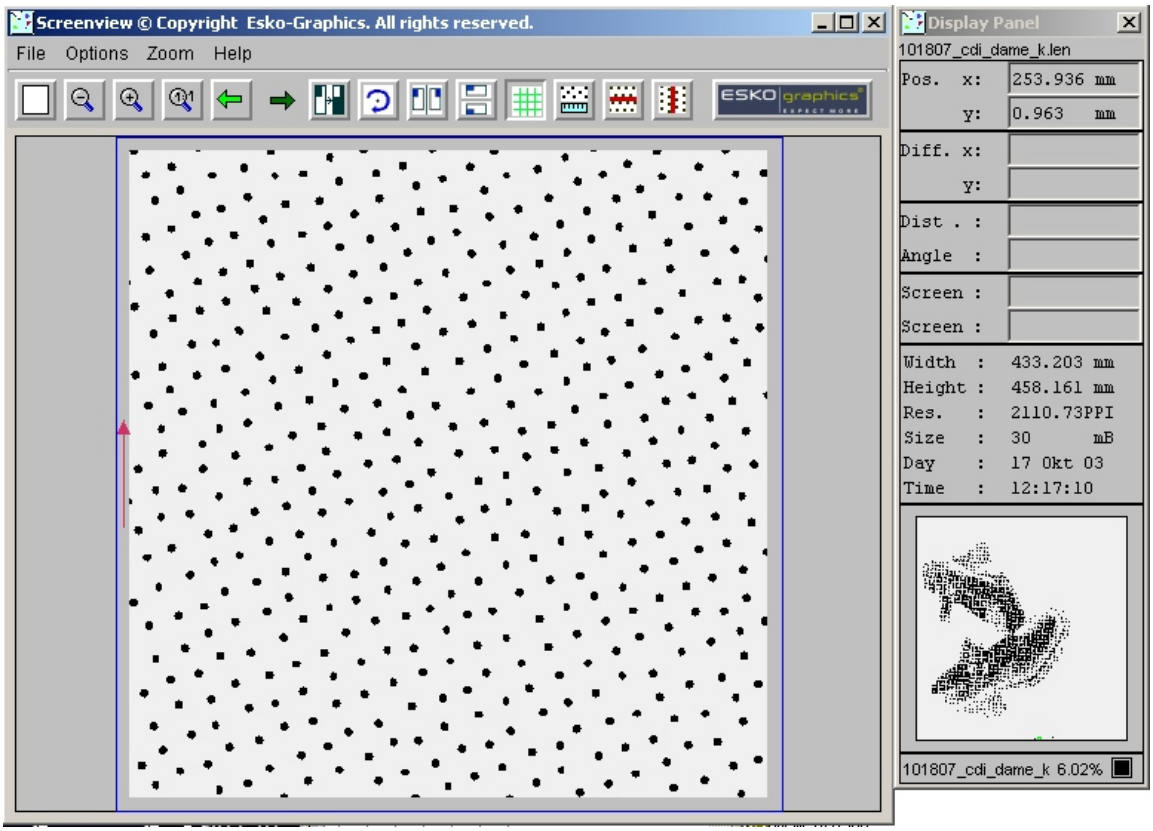


As soon as the marker has been set, the displays "Distance" and "Polar" are activated in the top right corner of the "Screen View" window.
There, you can see the mouse pointer's distance from the marker.
The field "Distance" displays the measured distance in the x and y directions in mm.
The field "Polar" displays the distance as a vector, i.e. you see the length of the line between the two points as well as this line's angle.
In this example the width of the box is measured at approximately 48 mm.

4-4-2 Measuring the black/white distribution

The program calculates the current zoom level's black/white percentage value at all times. In the full view the total value for the entire image is displayed: This value can be considered an indication for the ink coverage.

In the following example an unchanging grid surface is measured:



You should apply this option to a uniform dot section in order to measure the percentage value for these dots. The more homogenic dots you have in the measuring are, the more exact the measured value will be. In this case a value of 7.01% is displayed for the dot.

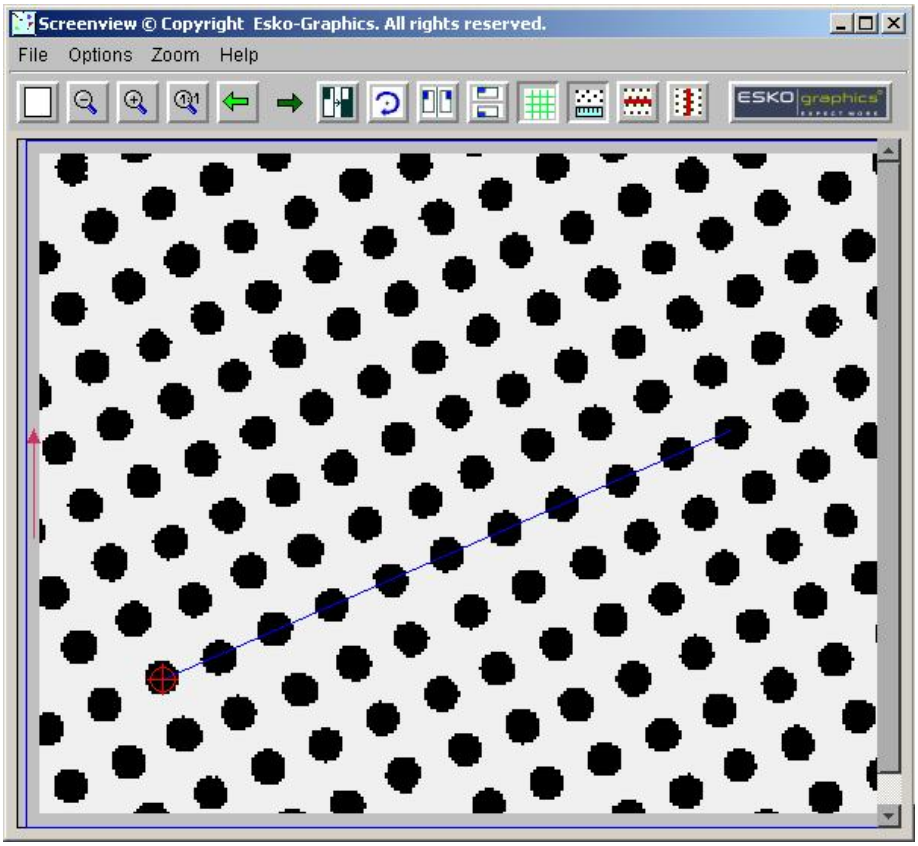
4-4-3 Measuring the number of lines and grid angles

In order to measure the number of lines and grid angles, you first zoom in on a gridded image area, to that you see at least 10 matrix dots in the angle direction that is to be measured. You then insert the red marker, just as you would do to measure distances. (See 4-4-1.)

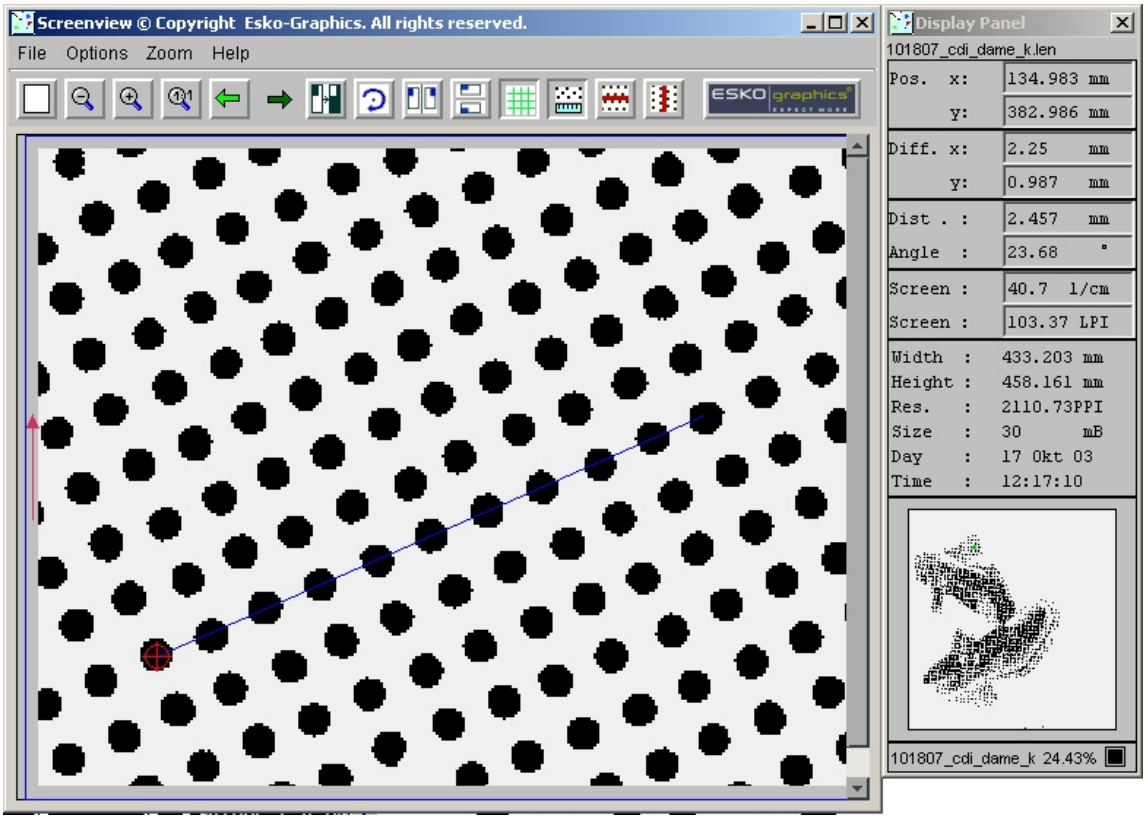
Set the marker to the middle of a matrix dot. The measuring option is activated automatically. (The icon with the little ruler):

This icon activates the blue line between the marker and the current mouse position, which serves as auxiliary line for the user.

You now count 10 dots along the dot line towards the top right-hand corner. Begin counting with the dot next to the dot with the red marker:



When you have reached the tenth dot you press the right mouse button and receive the following result:

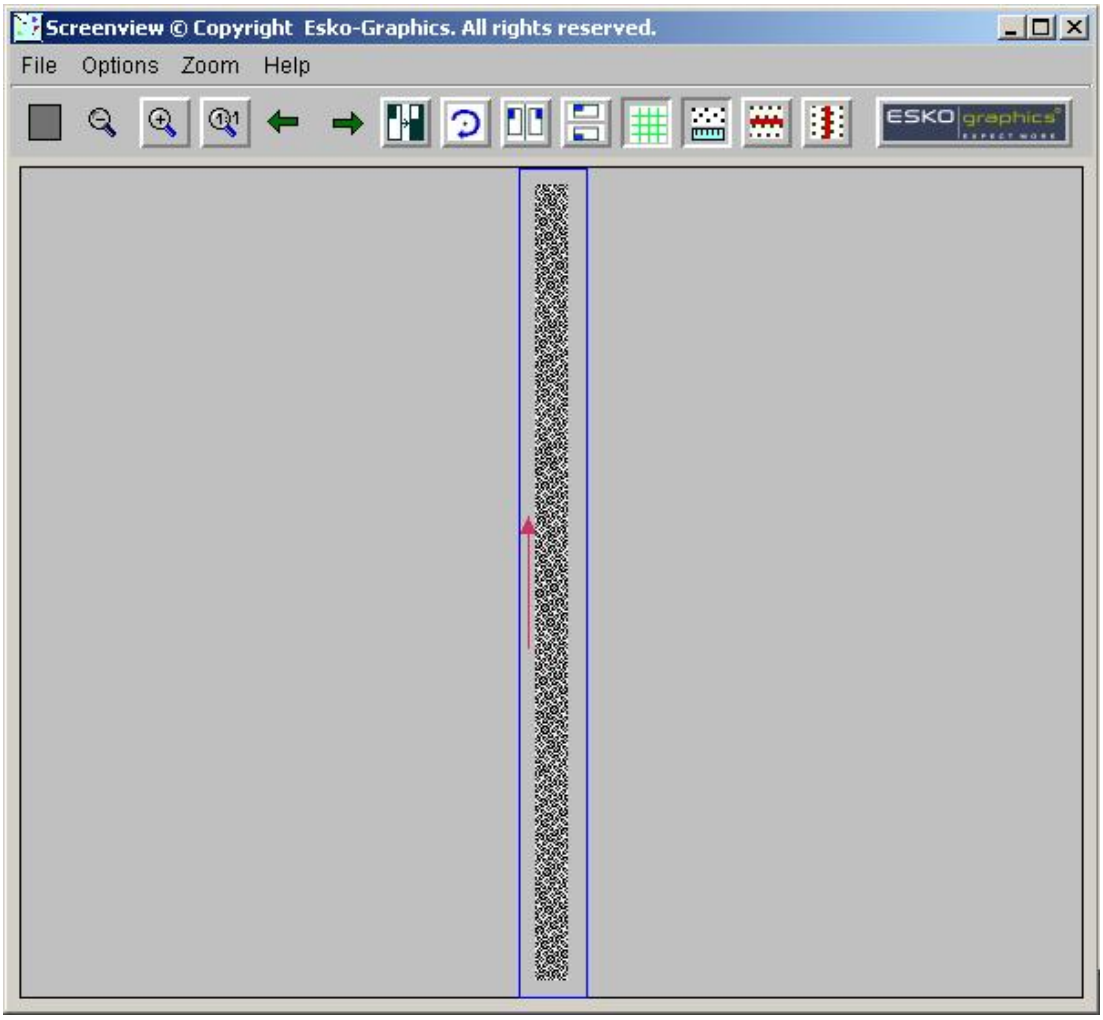


In the Display Panel the 2 entries for Screen show the value for l/cm and the LPI value. The grid angle value is also displayed.

4-4-4 Checking seams for seamless engraving

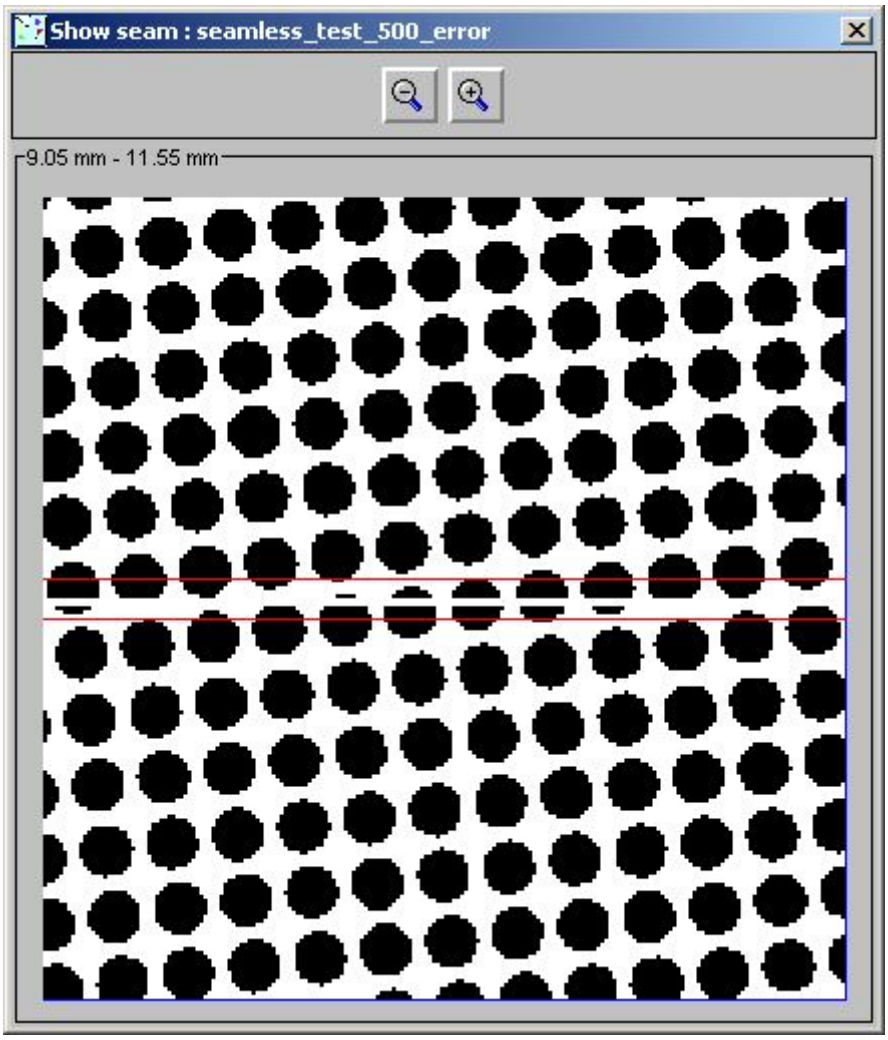
When seamlessly engraving a file with a complete circumference height onto a sleeve, it is extremely important that the elements on the bottom of the image match the elements on top of the image exactly. ScreenView now includes an option that lets you check if there is a perfect (seamless) match.

To do this, load the image that has to be checked:



Click on the "Show seam" button:

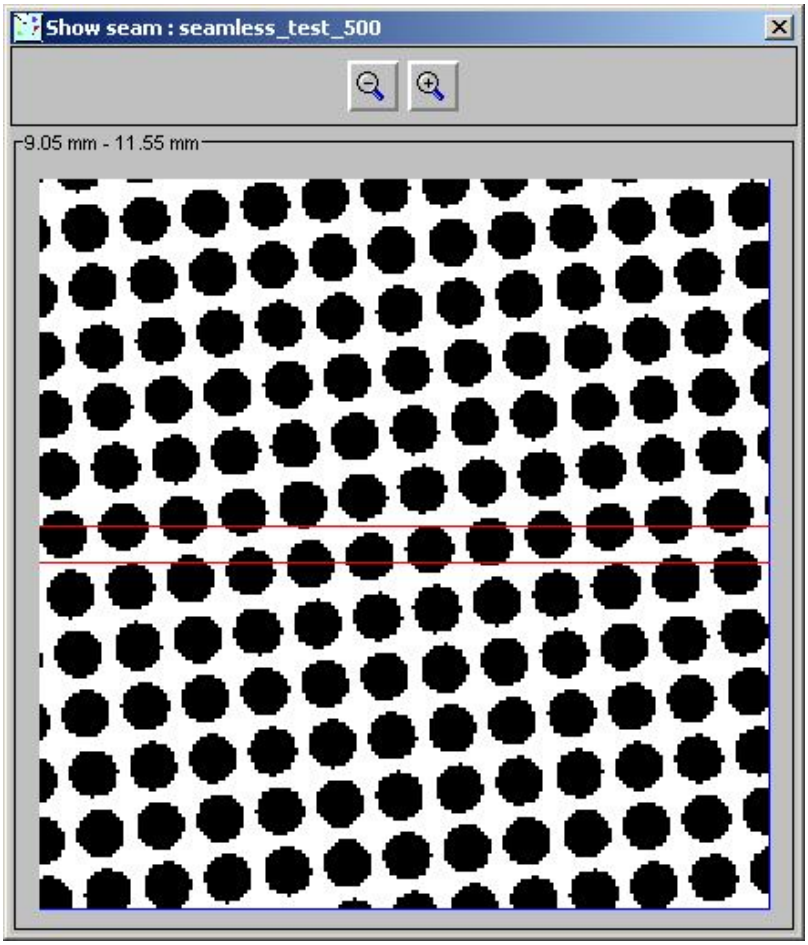
A window opens, displaying an enlarged view of the seam area:



The image's seam runs between the two red lines.

This here is an example for an image that is not seamless and that should better not be engraved on a sleeve! You can see clearly that the image has an unintentional gap.

Here is another example for a perfect seamless image:



Note: "Show Seam" always checks an area in the current image selection's center of the feed.

This means that if you select an image area on the left side of the image, you can check the seam on this side. The same holds true correspondingly if you select an area on the right side.

In order to check if an image fits seamlessly on the left and the right, you can press the button for the horizontal seam:

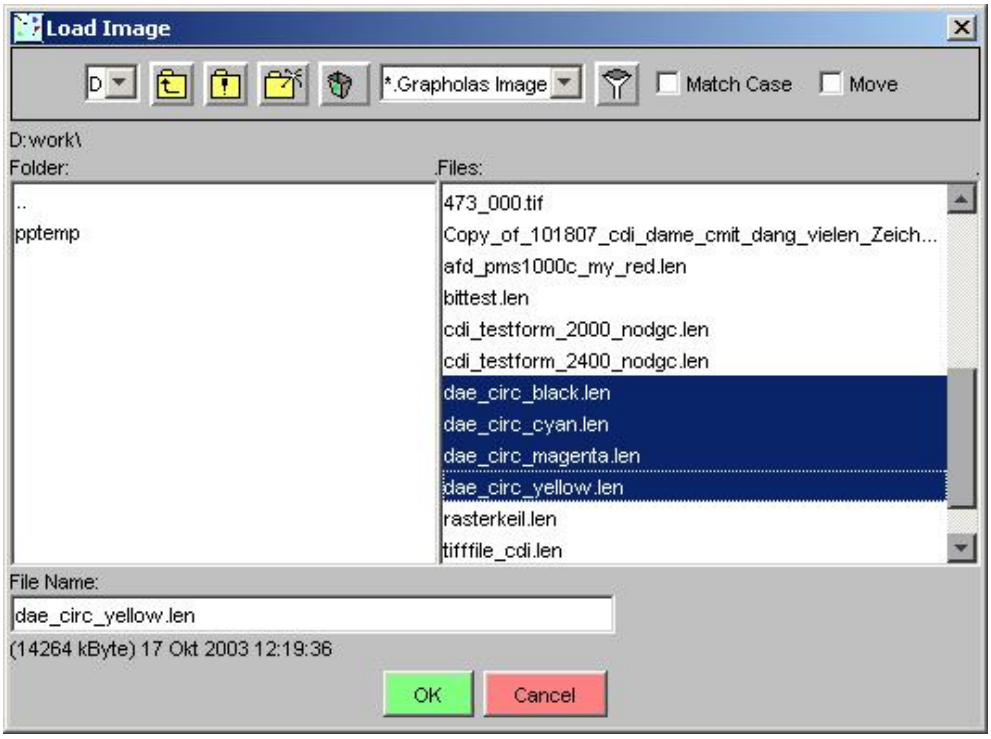
4-5 Overlaying images

Sometimes it is necessary to simultaneously display images belonging to one job. This may have to be done to verify the overlay of the individual colors or to see if the dot rosettes, resulting from the different angled color separations, match.

In the following, it will be explained how to load such a job into the ScreenView program:
This option is used (among others) to create a "Monitor-proof" for the job.
Of course, this cannot replace a real Proof or a Cromalin, but nevertheless it is often quite useful.

4-5-1 Loading color separations

To load such an image, you select the option "Load Image" as described in chapter 4-2. The difference is that in this case you use the Ctrl key to select several color separations for a job:

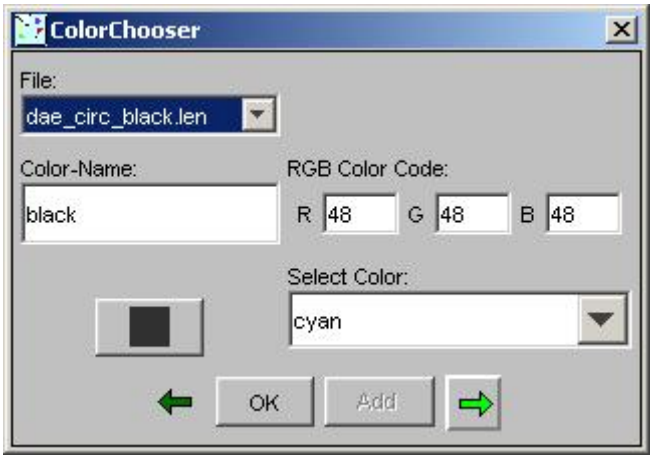


Make sure, that the file names should end in "_cyan", "_black", "_yellow", etc. These standard endings show ScreenView with which color the individual color separations are to be displayed. The endings "_c", "_y", "_m" and "_k" as well as Pantone color codes are also recognized. You must make sure, however, that the color code is at the end of the image name, right in front of the file extension.

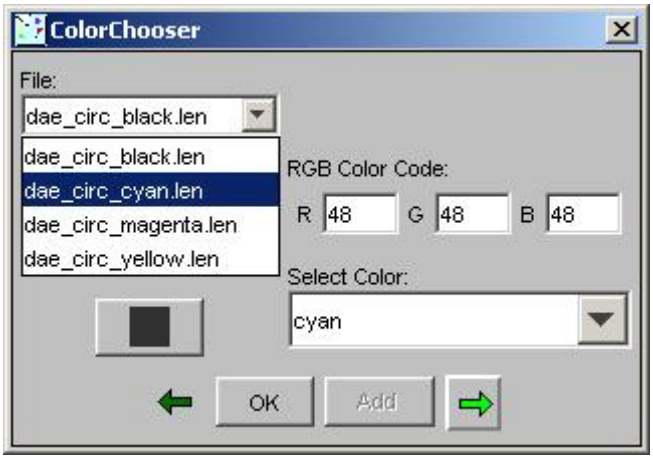
If the selected images do not belong to one job, i.e. do not have identical sizes and resolutions, a warning message appears, stating that this combination of colors cannot be overlayed:

GrapholasNT Box:
Unable to display overlayed images !
Reason: The selected images do not belong to one job !
OK

If an image cannot be associated with a color, a selection menu appears:

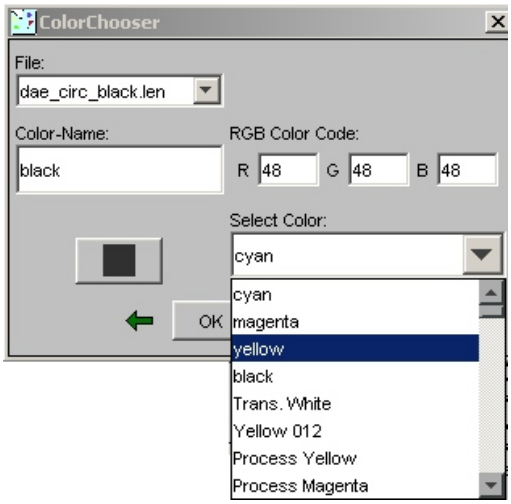


Here, the user must associate the image that was not recognized (in this case: dae_circ_cya.len) with one of the predefined colors.



To do this, you first select the image with the color that was not recognized, in this example the image: "dae_circ_cya.len". In this case the color code "cya" was not recognized.

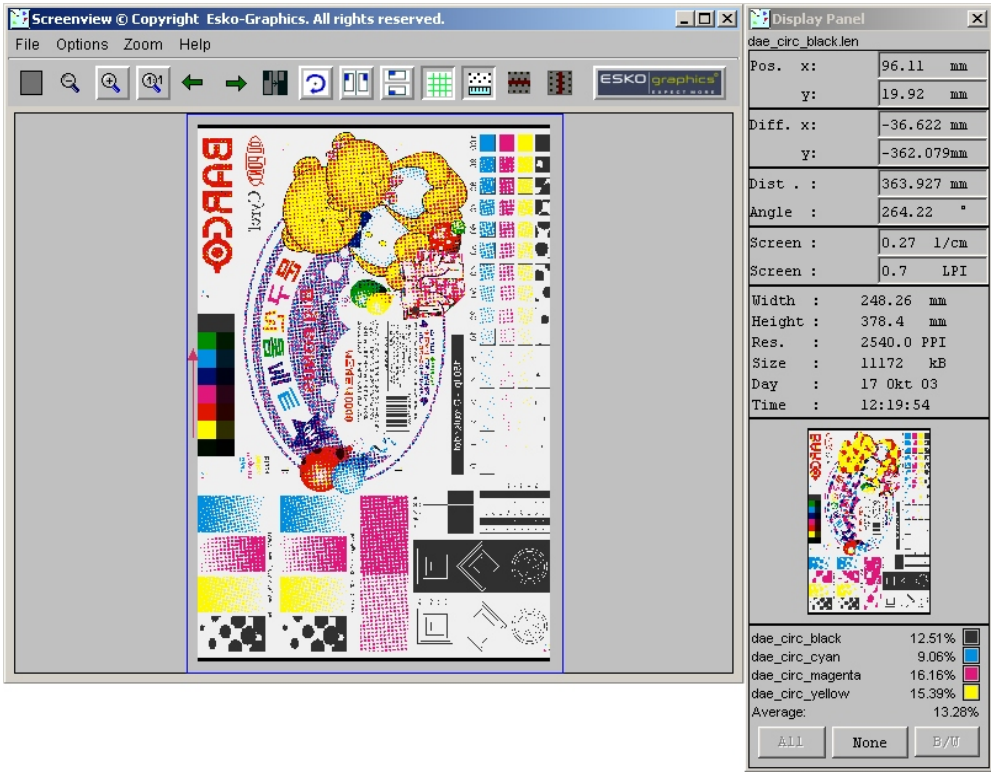
Next, you select a color that might fit, from a list of predefined colors:



In this case "cyan" is selected.

After this is done, the "OK" button is activated, as now all images can be associated with a color.

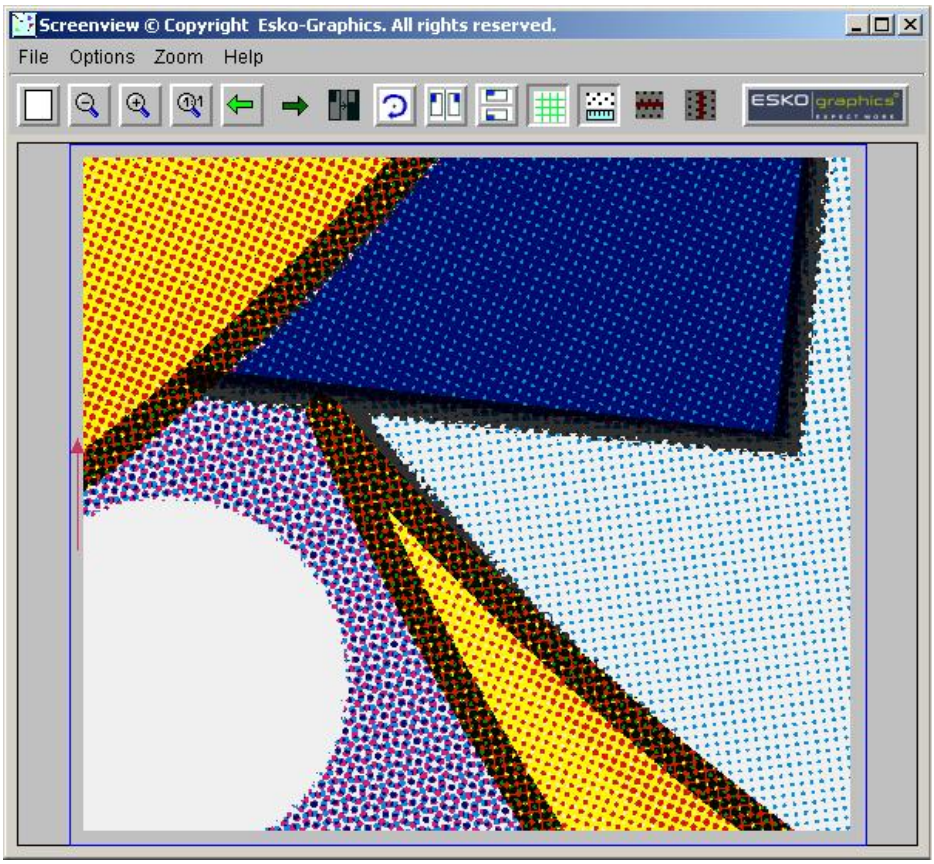
All 4 colors together then look like this:



The Display Panel now shows the percentage values of all 4 colors. Also, 4 buttons with

the respective colors are displayed.

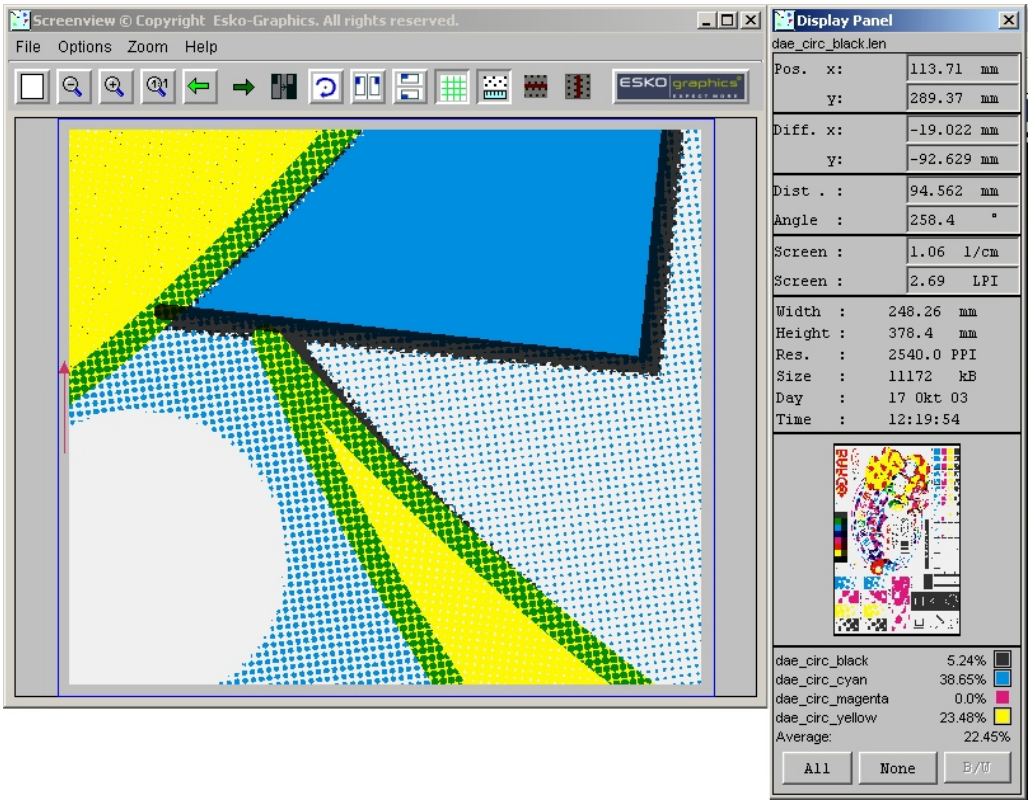
As soon as you zoom in on an area you can see how the individual color separations overlay. Wherever 2 or more color separations overlay, there is a slightly different shade of the colors, showing the overlay.



As mentioned above, there is a button for each color separation in the Display Panel allowing you switch the representation of the separated color on or off.

The next illustration shows the above example with the separated color "Magenta" switched off:

You can now see how the "Black", "Yellow" and "Cyan" color separations overlay.



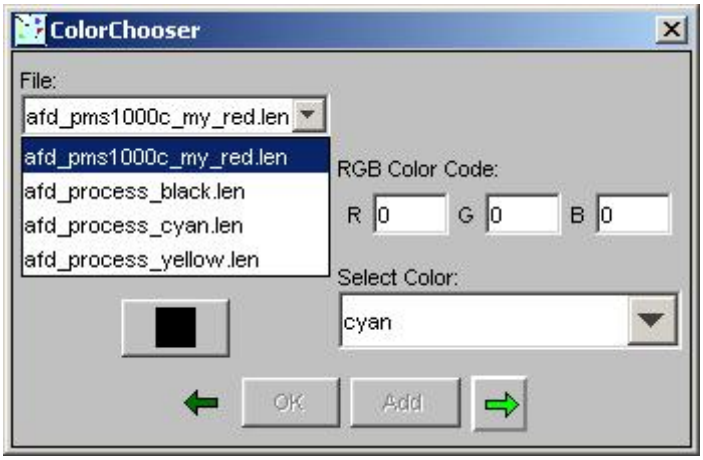
You can switch the "Magenta" color separation on again by simply clicking on the corresponding button.

4-5-2 Creating a new color code

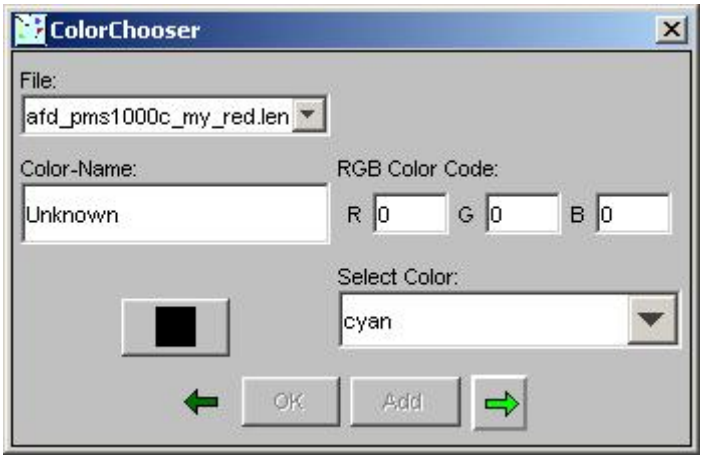
If you try to load a job's images and one or several of the colors are not contained in the color database, you can create a new entry.

This makes sense for designer colors, for example.

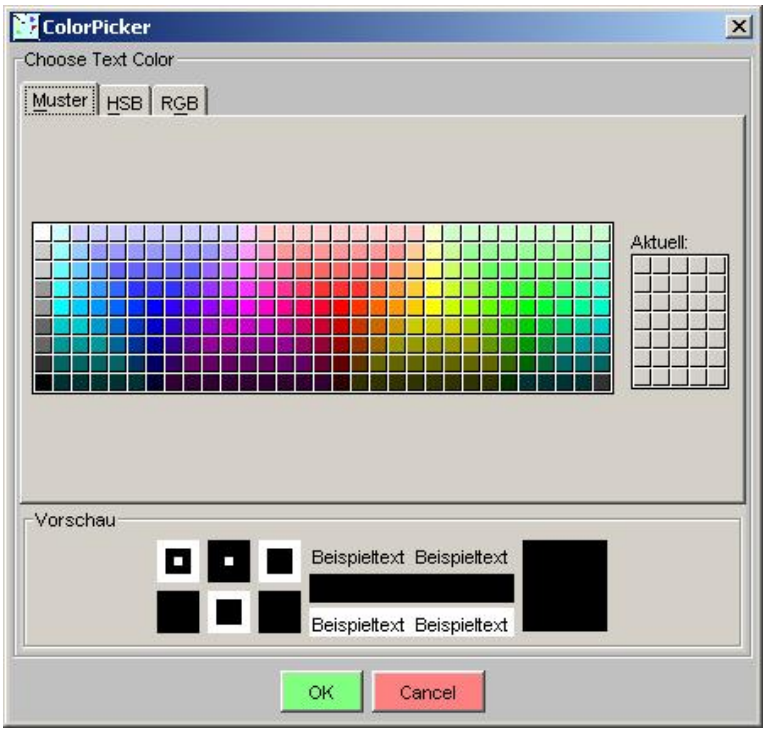
Here is an example in which an image has the color name "my-red":



As soon as you select the image with the unknown color, the following is displayed:



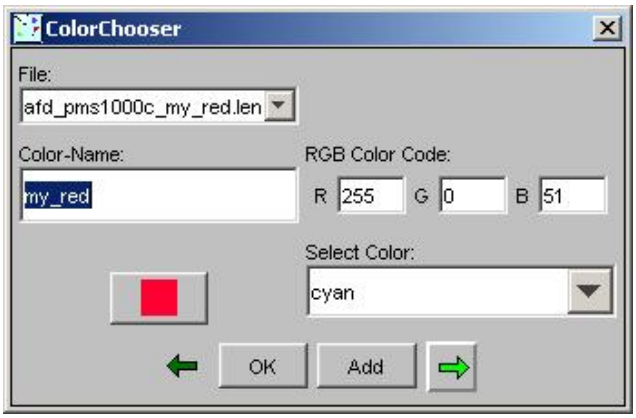
The color name is shown as "Unknown", i.e. it was not recognized by the system. Now you click on the button:



A so-called "Color-Chooser" opens. Here you can now select a color.

As an alternative, you can also enter the RGB color code directly in the previous window.

As soon as a color code has been selected, the colored button in the RGB color code displays the corresponding color. Next, you provide the system with a color name for this new color: "my-red"



You now see that the button "Add" is activated. Clicking on this button adds the new color to the color database.

Pay attention that the color name does not contain the "_" character, as these characters are used as separators between the image and the color name. Therefore

"my-red" is correct, "my_red" however is not!

Next, a window appears, allowing you to specify an abbreviation for the new color name:

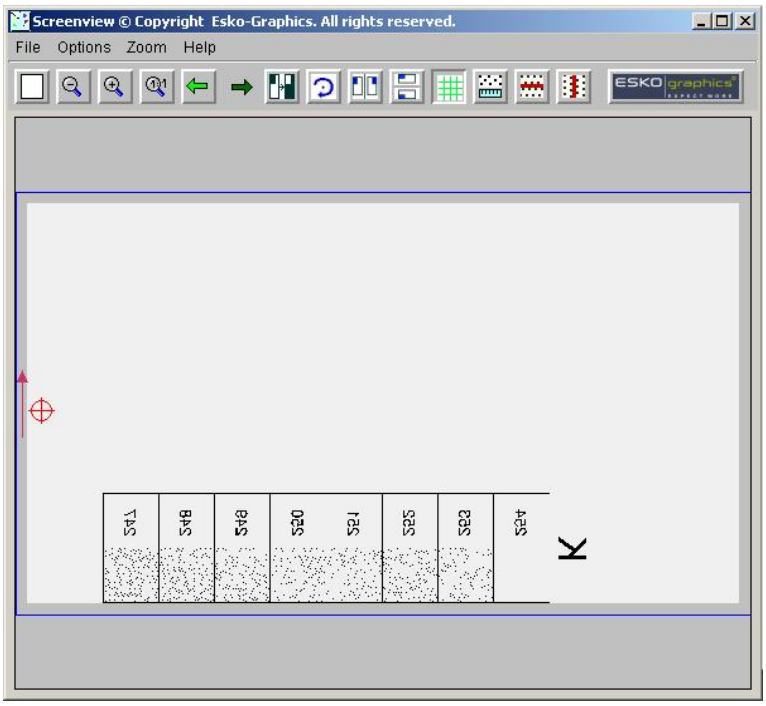
Here you could, for example, enter "myr". The system will later recognize this color both as "my-red" and "myr".

If you leave this field empty, the system will recognize only the unabbreviated name "my-red".

4-6 Cutting out an image clipping

Another feature provided by the ScreenView program is the possibility of saving a selected area within an image as a separate file.

To do this, you select an area on the image with the mouse, just as you would do to zoom in. The decisive difference is that you must also press the Esc key at the same time:



As long as the Esc key is pressed, the mouse pointer is visible, as shown in the illustration above. It no longer shows an arrow, but rather a hand.

If you let go of the left mouse button, the following window appears:

Grapholas Box:
File: 101807_cdi_dame_k.len
The clipped window will be stored as a new file.
Effective size:: 76.535 x 43.334 mm
Do you want to continue ?
OK
CANCEL

Clicking on "OK" saves the selected area in the same directory that the original image is located in. In doing so, ScreenView selects a name in the following way:

Original image: Filename.len

Clipping: Filename_vcut0.len

If you save several image clippings from one single original file, ScreenView then enumerates the resulting images: Filename_vcut0.len, Filename_vcut1.len etc.

Note: By pressing the keys "CTRL" and "S" you can save the currently visible image selection.

4-7 Image manipulation

The Grapholas 5.0 version of the ScreenView program offers 4 new options for image manipulation: Show positive/negative viewing, rotate, flip horizontally, flip vertically

These options only affect the image's view, not the image itself.

The following buttons are used to perform the corresponding options:

Show positive/negative

Rotate by 90°

Flip horizontally

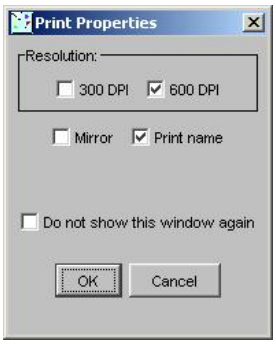
Flip vertically

These options do not affect the miniature image in the Display Panel, so that you always keep an overview of which part of the image is currently being displayed.

4-8 Printing

The "File" menu offers 2 printing options: "Print" and "Print visible Area"

If you select one of the options, the "Print Properties" window opens:



This is where the ScreenView program determines which resolution is to be used during printing, if the print output is to be flipped, if the image name is to be printed as well and whether this window should be shown in the future.

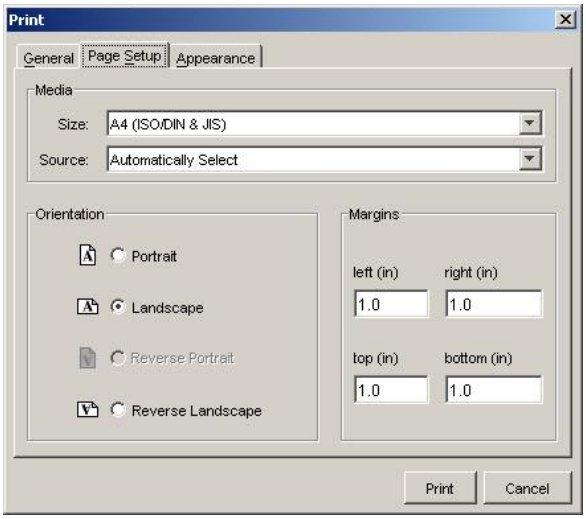
The settings you specify here are saved. If you want to change them at a later stage, you can always reactive this window by selecting "Options" -> "Allow Print Properties Window".

4-8-1 Print option

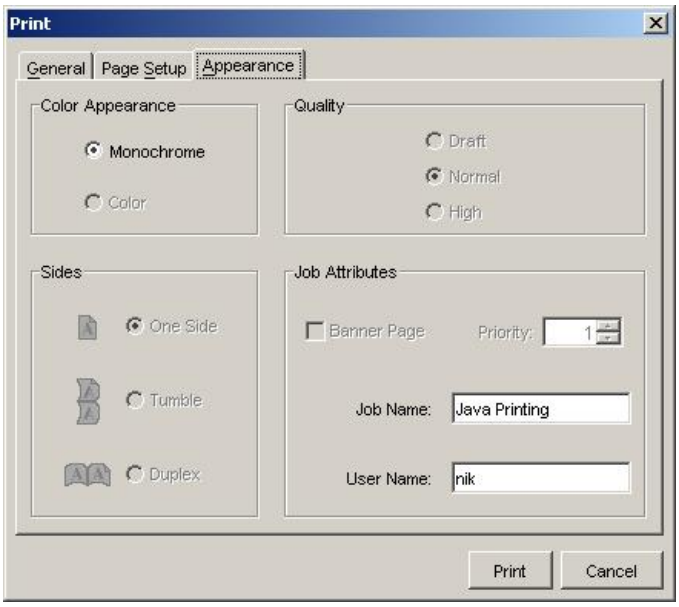
This option allows you to print the loaded image file. It can only be selected if you have loaded only one single image file.

If the option is selected, the program looks for printers available locally and on the network. As this process takes a little while, up to 60 seconds may pass depending on the available network, until the print menu appears:

You can choose one of 3 tabs. The first one allows you to specify which printer is to be used and how many copies are to be produced.



On the second tab you can select the paper size and Portrait or Landscape orientation. Should you make no selection here, ScreenView will independently select one of the formats.



The last tab determines, whether the printing output should be black and white or in color.

Printing begins as soon as you click on "OK" on the first tab.

4-8-2 Print visible area option

This option allows you to print the currently visible area of the image. If several separations of one job are loaded concurrently, this print-out may also be made in color on a color printer.

4-9 Further options

The "Options" menu allows you to select the unit of measurement that is used. You have the choice between "mm" and "inch".

You can also select the option "View always maximized". If this option is activated, ScreenView will always try to select the displayed image segment in a way that the window space is used completely.

CHAPTER 5 Network configuration

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5-2 Creating a new entry for a local drive 3

5-3 Creating a new remote drive 7

5-3-1 Connecting to ESKO FlexRip 9

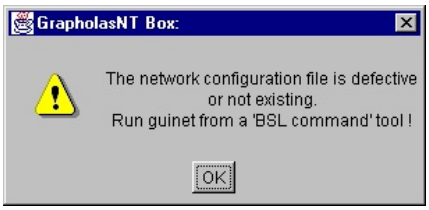
5-3-2 Connecting to ESKO Fastrip 9

5-4 Editing an existing drive 9

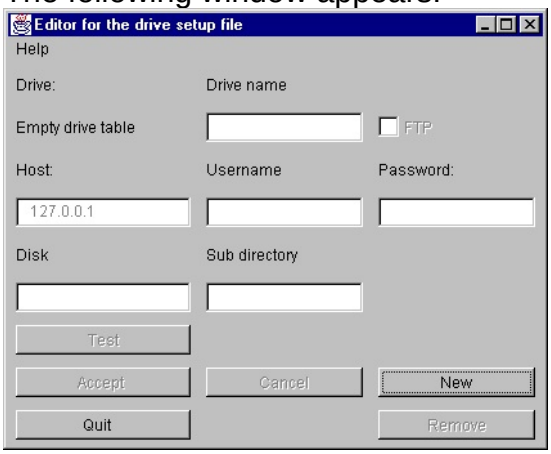
5-5 Granting access to an entire drive 10

5-1 Beginning with an empty file

If there is no network configuration file, the Merge program will ask you if you want to create such a file:



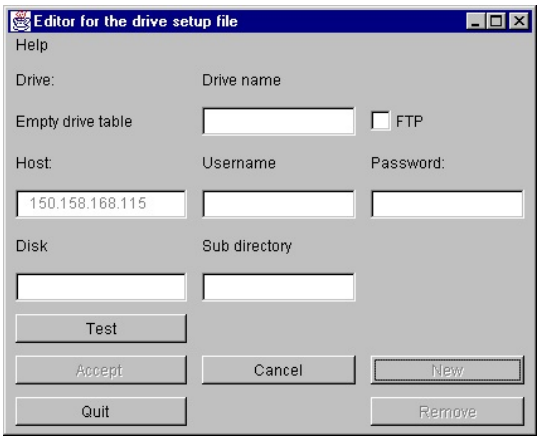
If you click on "OK" the Merger closes again. You must now run the "guinet" program from a DOS prompt or double-click on the file "c:\bsl\ui\guinet.bat".
The following window appears:



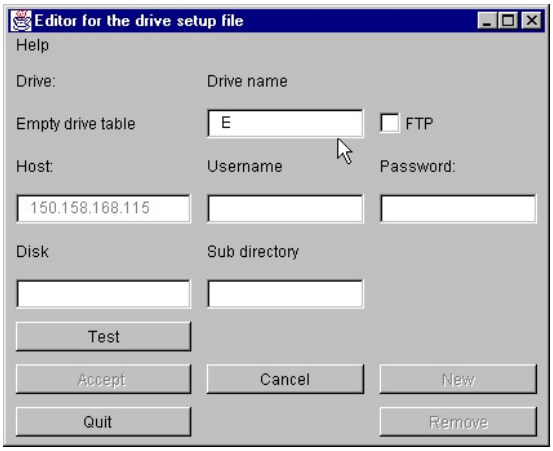
At the place where you usually find the drive selection, "Empty List" is displayed.
This means that no drive has been defined.
After a regular installation the drive list is usually not empty. The installer automatically creates a "gui.net" file with the data drive that was defined during installation.

5-2 Creating a new entry for a local drive

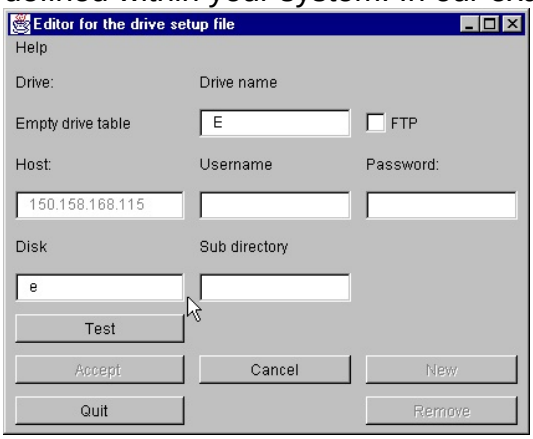
Click on the "New" button to define a new drive:



Enter a name for the drive in the field "Drive name", e.g. "E".
Any text may be used for this name. It is displayed in the drive selection of the Merge program's file selection window.

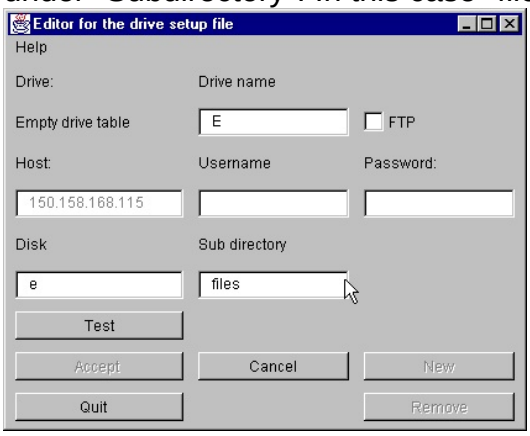


Next, enter a name for this drive under "Disk". Here, you must provide the name that is defined within your system. In our example this is "e" for the hard drive "e".

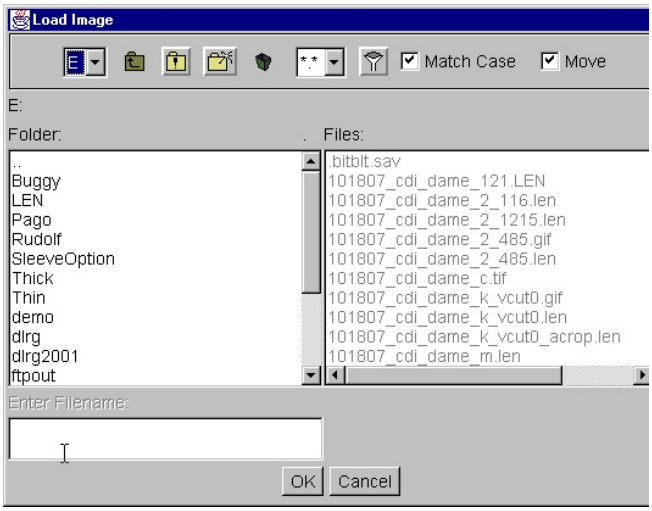


Finally, you must specify the subdirectory on drive "e" where the .len-files are located

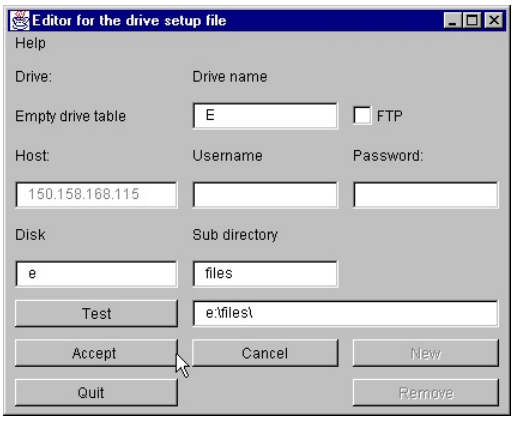
under "Subdirectory". In this case "files" was used:



Now click on the "Test" button.
The Merge program's file selection field appears. Here, you can verify whether the image files are really located in the selected directory on this drive:

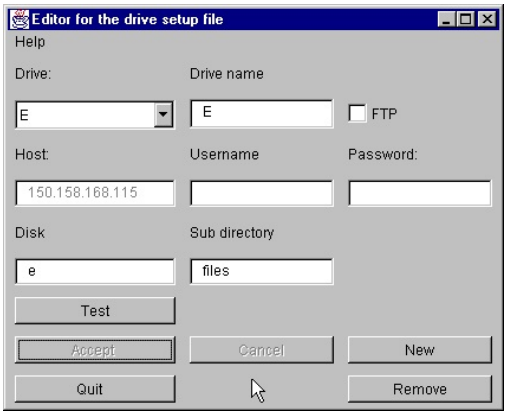


You can search the drive's subdirectories for .len-files. Click on "OK" if the image files are located in the specified directory.
If the test was successful, the "Accept" button is activated:



To the right of the "Test" button a text field now shows the selected path for this drive.

Click on "Accept" to save the settings for this drive.



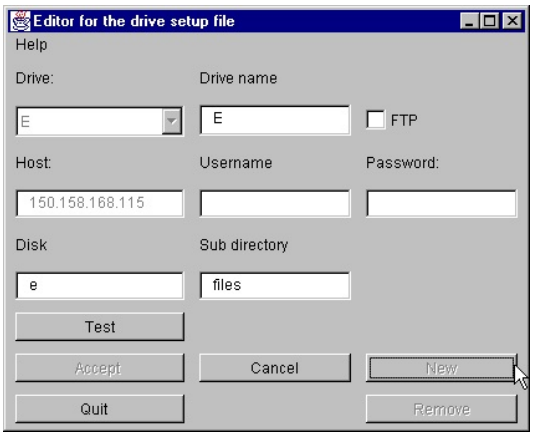
We have now created a new drive for the Merge program.

Note: The default drive for all imported .len-files is usually "E:\files".

5-3 Creating a new remote drive

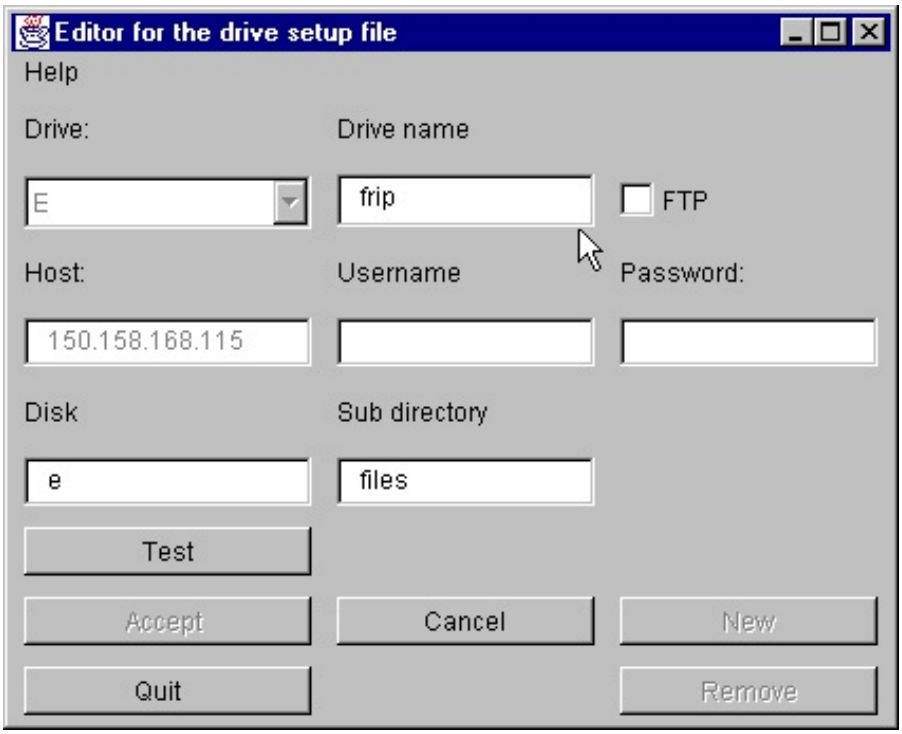
A remote drive is a non-local drive that the Grapholas® PC accesses via FTP.
To do this, the user must perform an FTP login on the remote host.

Click on the "New" button to create a new entry for an FTP drive:

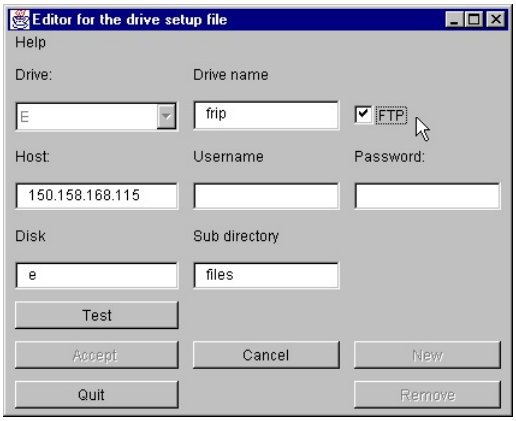


Enter a name for the drive in the field "Drive name".

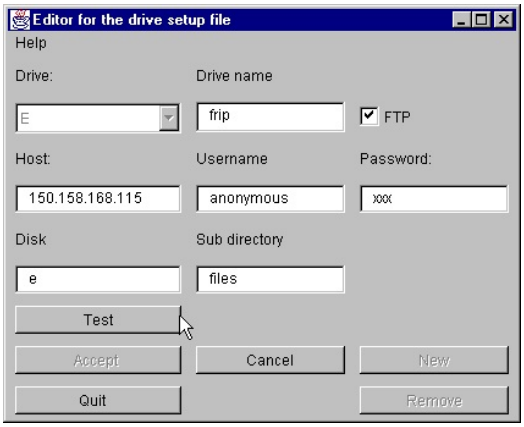
This name will later appear in the file selection field's drive selection list.



In our example we entered "frip", to specify that an ESKO FlexRip is to be contacted.
Now check the box "FTP".



The fields "Host", "Username" and "Password" have now been activated.
Enter the IP address or the correct host name under "Host". Provide the user name for the FTP login under "Username" and the corresponding password under "Password".



In our example we use the Host-ID "150.158.168.115" for user "anonymous" and the password "xxx".

This is a typical example of an FTP user on the FlexRip platform. Instead of "xxx" you may use any other password, as no password is configured for the user "anonymous". Nevertheless, you must enter something into the field "Password".
You furthermore specify the logical drive name under "Disk" and the first subdirectory on this drive under "Subdirectory":
You can now click on "Test" to check if a connection to the host can be established:

As a last step, the new drive is added to the list of known drives by clicking on "Accept".

5-3-1 Connecting to ESKO FlexRip

The FlexRip is connected with a "Remote FTP" drive as described above.

As described in chapter 7-5, it is important that an FTP server is installed and running on the FlexRip. The FlexRip is installed on a Windows computer.

Please also refer to chapter 7-6 on how to install an FTP server. So on the FlexRip an "anonymous" user has been configured and we can connect the drive with "anonymous" and "xyz" as a password.

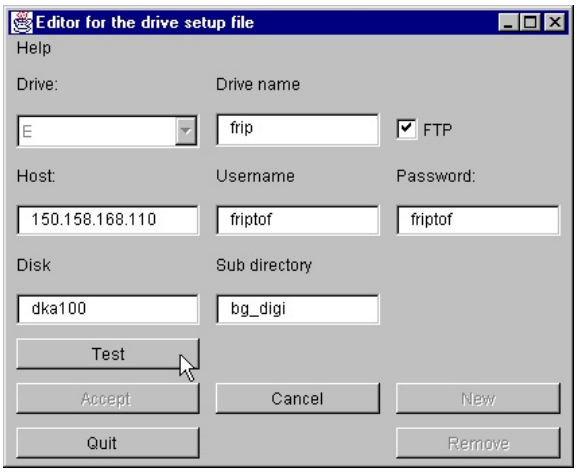
Verify that the FTP user has access rights to the export directory for the .len-files! (Chapter 7-6)

5-3-2 Connecting to ESKO Fastrip

The FastRip is also connected as an FTP drive. In this case we cannot use the "anonymous" user to transport the data.

Instead, you must use the user "friptof", which is installed on most FastRips. You therefore use "friptof" both as a username and as a password. Apart from this, the connection to the FastRip is configured in exactly the same way as the connection to the FlexRip.

The only exception is that you must use the drive's name (e.g. "dka100) instead of a letter for the drive. One of the reasons for this is that the FastRip runs a machine with a VMS file system. However, it is not necessary to use the VMS syntax when specifying the path. The Grapholas FTP program automatically takes care of this.



5-4 Editing an existing drive

If you want to edit an existing network configuration file, open a DOS window and enter

"guinet" at the prompt.

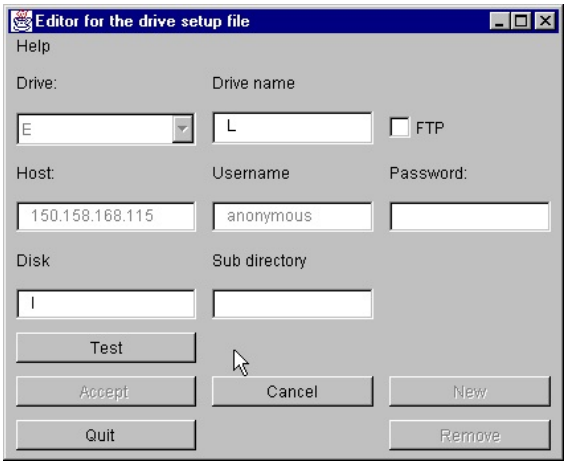
Then select an existing drive in the drive selection to edit its settings.

When you have finished, click on "Test" to check if the new settings are valid. Only after you have done this can you save the new settings!

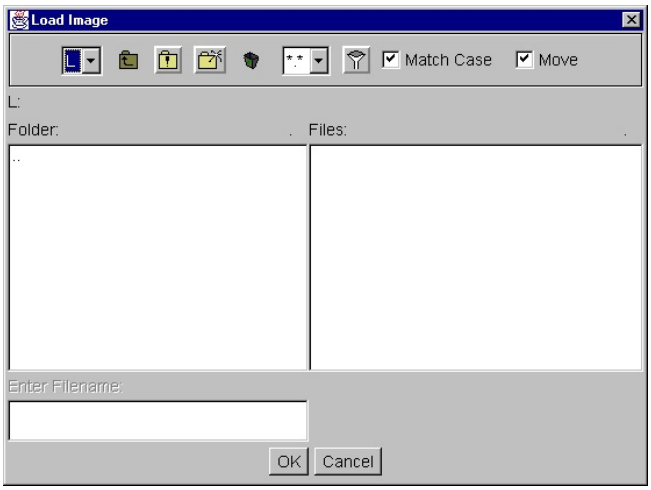
Of course, you can also simply click on "New" and add new drives (see chapters 5-2 and 5-4).

5-5 Granting access to an entire drive

Sometimes it is necessary to grant Grapholas access to an entire drive. To do this, you proceed exactly as described in chapter 5-3. However, instead of specifying a subdirectory, such as "files", you enter only blanks:



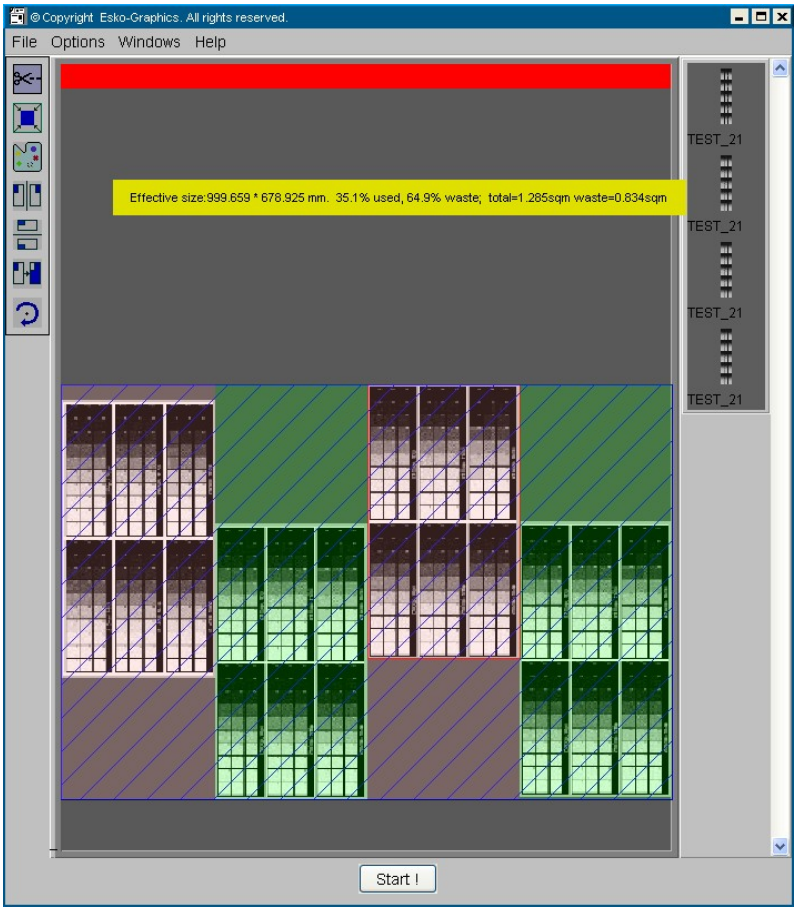
If you now click on "Test", the File Handler shows the corresponding drive's root directory:



Note: ScreenView may also use these drive lists to access image files! (See also ScreenView documentation)

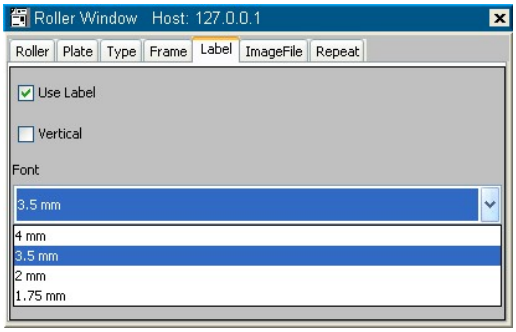
Differences - Grapholas 5.0 → 5.5

- Enhanced ABS – In the Superskip-Zone the job is splitted vertically to change the no. of beams
- In the Merger the Productivity can be checked with a right-click next to the image:



GREEN: Full productivity - RED: Reduced productivity due to lower no. of beams

- The font size for labeling the images can be choosen:



- TIFF-Output for Megasetter available
- New Startup / About screens
- New Esko-Logo implemented
- New Screentable-format
- Screentable editor available
- Screentable will be loaded from the CDI with the PlatePrep
- New Installation Gui – All CDI´s are supported